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AUTHOR Emery, Merrelyn, Ed.
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ABSTRACT

This four-part volume addresses design principles for introducing democratic forms in workplaces, educational institutions, and social institutions, based on a trend toward participative democracy in Australia. Following an introduction, part I sets the context with two papers: "The Agenda for the Next Wave" and "Educational Paradigms: An Epistemological Revolution." Part II, Participative Design at the Organizational Level, includes "The Light on the Hill '88--'Skill Formation' or 'Democratization of Work'"; "Participative Design: Work and Community Life"; "Further Learnings about Participative Design"; "Matching Effectivities to Affordances in the Design of Jobs"; "Laissez Faire vs. Democratic Groups"; and "Getting to Grips with the Great 'Small Group' Conspiracy." In part III, Democracy throughout the System, the following articles are included: "Towards Real Democracy"; "Adaptive Systems for Our Future Governance"; "Industry Councils--Comments on One Aspect of the Jackson Report"; and "The Jury System and Participative Democracy." Part IV discusses participative democracy in education and contains the following papers: "An Inadequate Dichotomy: 'Structured' vs. 'Unstructured' Learning"; "A Training Workshop on the Theory and Practice of Search Conferences"; "Multisearches"; "An Alternative General Studies Curriculum: A Description, Results and Evaluation"; and "Participation and Self Management in Course, Workshop and Conference Design: Principles and Methods." The book's contributors are Merrelyn Emery, Fred Emery, and Allan Davies. (NLA)

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PARTICIPATIVE DESIGN FOR PARTICIPATIVE DEMOCRACY

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Edited by Merrelyn Emery

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Enquiries should be addressed to:

The Director
Centre for Continuing Education
Australian National University
GPO Box 4
Canberra ACT 2601

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Merrelyn Emery
November 1989

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INTRODUCTION

Merrelyn Emery, 1989

A new and major wave of activity to democratize is now evident in Australia. It ranges across the Office Structures Review in the Public Service, various second tier wage/productivity agreements signed by major institutions to a continuing sequence of smaller scale changes in both private and public sectors. In short, those who forecast the end of democratization when there was a slackening of interest and a sense of demoralization about the problems involved in the first waves, underestimated the power of a **good idea**. The immediate sources of the new wave are many but these are less important than the fact that this good idea is now much more in tune with a large proportion of people's aspirations and values.

Amongst other things, the successive waves of democratization in Australia reveal that good ideas have influences and consequences apart from a direct and immediate effect on widespread organizational change or national policy. It will never be possible to dissect out what proportions or bits of this current wave are due to changes in the value base of the external social field or to the educational effects of the previous waves, but surely they have influenced and in a very real sense, made each other. Previous waves have influenced values and higher expectations of the quality of life in virtually all spheres, paid employment, domestic relations and others. Regardless of short term setbacks, failures and disillusionment, ideas were implanted for incubation and good ideas, good for people, are difficult to put down.

Given all this, there are still no guarantees that this wave will produce the critical mass of understanding and motivation that is required to bring about a genuinely democratic culture. Hence this volume. It is simply one more step in such an effort. The judgement of the authors herein is that it is timely to bring together in one volume some of the most important ideas and practices informing the changes we see about us.

But there were always problems lurking around in the minds of many which some made explicit. How after even a very successful introduction of participative democracy at say the operational level of a work organization can we extend it to all levels and particularly to the crucial mechanisms and processes which must link self managing groups across and up and down the remaining hierarchy? Does it only apply to work organizations or can it be adapted to organizations with

other purposes and to our various levels and types of government? How can it best be incorporated into the education system so that learning of and about participative democracy can begin before we enter organizations as adults? In short, how can it be extended into a culture wide system?

While most energy has been put into democratizing work places, this has by no means been the only area in which it has been tried and also, there are clear indications of the way ahead in making participative democracy work effectively in the area of government.

Now that we are in a new wave it is important that people have access to these ideas, their origins and evolutions as well as best guesses as to their implications for the future. In addition, there are many misunderstandings of the processes and goals of participative democracy. Whatever their origins and some are discussed here, progress will not be made on the broad canvas until they are opened to widespread debate and trial.

Our goals therefore are to:

- . put in one easily accessible volume the most effective and up-to-date methods for introducing democratic forms at all levels of society;
- . enable more learning about the concept of democracy so that our path through to a more participative and, therefore, genuinely democratic society can be as free of potholes and rocks as possible;
- . head off any regressive trends towards greater autocracy by the previous two.

Part I consists of two papers by Fred Emery. They are totally different in kind but each has a specific purpose in forming the context for the reader. 'The agenda for the next wave' sets the scene as perceived by a social scientist at the forefront of international social science. It is an edited transcript of a keynote address he delivered to a small but select gathering of international social scientists and apprentices in the action research tradition, in Canada in 1985. I believe the sense of this paper will be immediately obvious to any reader. It outlines the choices we have before us as we confront our multiple problems and what we must attempt to do if we are not only to save, but also to enhance our democratic heritage.

It opens the way for the papers in Part II which centre around the concepts and practices of organizational democratization and their function to create learning and environments which generate continuing learning. Unless this vicious cycle replaces the really

vicious cycle of deskilling, apathy, dissociation and their consequences such as gratuitous violence, we will inevitably return to a more undemocratic society. This latter cycle both feeds on and produces contempt, distrust, oppression, cruelty and general inhumanity- not a pretty scenario for us.

The second paper in Part I presents not an overview but a detailed analysis of where we have gone wrong in the most fundamental assumptions we have made about ourselves; how our perceptual system works and how we have translated it into what we call the 'education system'; that which often bears little relation to the learning we wish to produce.

This volume is about the nexus between learning and democracy, learning about democracy through concepts and practice and learning how to set up democratic structures which are intrinsically learningful. It is not about teaching except as part of an integrated learning process. This, to be successful cannot be divorced from the broadest context in which the learning is required and the purposes it is serving. Useful learning, particularly for adults who are trying to understand and behave responsibly in an environment characterized by rapidly growing uncertainty, must utilize every available ability to perceive, correlate and act adaptively. While education has traditionally been conceived as putting things into people's heads, there is now a desperate need for people to understand what their heads (and the rest of them incidentally) are into - what is going on out there, what do we make of it and how do we work with others, and the environment generally, to bring it under our adaptive control?

Knowing the environment and its complexities, including its many diverse ideas is an essential component. When given opportunities to elucidate our environment and share collective and individual ideals and hopes, we find a great commonality, but these opportunities are few and far between and the human ideals rarely surface otherwise. Life is too busy, too dissociated and too full of short term problems for us to sit down together and think about what is going around us. Every change is treated as a problem to be solved and put behind us as quickly as possible. Context and thought through adaptive strategies fall by the wayside. This is the pattern documented in the 'next agenda' paper and specifically addressed in terms of philosophies and beliefs of learning in 'Educational Paradigms'.

If we do not know how to look at our extended environment it is certainly predictable that we will not understand the growing uncertainties of our age and the changing allegiances of our kids, for example. Conflict will grow past the point where we can control it.

There are many now who trust their own perceptions above the so called traditional wisdoms stuffed into them by parents, teachers and other authorities alike. They have a point. **Human beings are not machines in a mechanical universe** (as is implicitly claimed by the first educational paradigm).

Theoretically, there is a clear alternative. It consists of integrating ecological perception with a design principle which acknowledges and builds upon a multifunctional and creative human nature. Part II discusses and demonstrates these at the organizational level. Part III presents the thinking and practical work which has been done on diversifying this into other areas and levels. It makes clear the fact that democratization is not simply something for a multinational or a small group; a discrete organization. It is as applicable to a community, industry or nation, any body or grouping which needs to plan, devise a policy and work effectively towards it.

The two main methods we have designed and progressively developed, the Participative Design Workshop and the Search Conference are different but overlapping forms. Both were conceived within and derived from the same set of concepts and principles; those which comprise Open Systems Thinking (Emery F, 1969, 1981). The Participative Design Workshop's specific purpose is to achieve structural organizational change and participant's learning of how to achieve it. The Search Conference is designed as an alternative to elitist and optimizing planning and specifically includes appraisal of the extended social field and its changes. By virtue of this element and its inherently democratic processes and discourse, it is highly effective for almost any form of planning, policy making or future oriented activity. It is this broad applicability of the Search Conference which has demonstrated that participative democracy need not be confined to discrete organizations or more narrowly to work organizations. Any group coming together around a common purpose can practice in the participative democratic mode and as Alan Davies has shown, it can be equally well adapted to the planning and conduct of an educational course or conference, which is anyway, only a temporary organization or community.

Democratic principles and mechanisms are also as feasible vertically as they are horizontally. There are no good reasons why we should not have organizations in every sector comprised of non dominant hierarchies of functions (objectives) where participative democracy is comprehensively practised, replacing the various current autocratic and representative structures. Our traditional belief that a hierarchy, one above another, must mean that the superordinate has the right to order and the subordinate to obey, is increasingly proving unworkable and is,

therefore, obsolete. All that is required now is the foresight and will to bring more of the alternative precedents into being, to show that it is possible and practical.

There are two companion volumes. A comprehensive treatment of the context, theory and practice of Search Conferences can be found in Searching (1982). Rather than attempt to replicate much of that here, I have included only a short paper on the brief introductory workshop for those interested in becoming Search Conference managers. This spells out some of the basic assumptions and concepts but those who want to know more are referred to Searching. The second, Towards Real Democracy (Emery F, 1989) is a rich elaboration of democratic concepts at the larger system level. It will answer many of the remaining questions about the structures and processes required for a coherent democratic culture. The rest of this book will serve its purpose if it alerts some to the possibilities which already exist and the need to get started.

Time and effort will certainly be required to fulfil this next agenda. And in many ways we are only at a beginning. But there was a previous beginning and that also has a history

Three Landmarks Leading to Participative Design

This publication has a direct ancestry spanning 18 years from the first socio-technical design performed by the workers themselves (participative design) in 1971 with the Royal Australian Air Force. A second stream of the history which shares the ideals and purposes of the first began with the first Search Conference (participative planning and policy making) designed by Fred Emery and Eric Trist in 1958 (Emery M, 1982).

These streams converged in the early seventies into a coherent strategy and tool kit for restoring dignity in organizational and community settings by reinvolving people in the decision making that affects their lives. The emphasis is clearly that of effective participation and the goal is a participative democracy.

The history of the move towards the redesign of organizational structures is, of course, longer. The **first landmark** was the group climate or leadership experiments in 1938-9 (Lippit and White, 1939). These laboratory experiments established that there were only three structural genotypes; autocracy (now technically termed bureaucracy) democracy and laissez-faire (essentially a non-structure). In addition, they established that these structures have profound and predictable

effects on the people who live and work within them, regardless of the personalities involved.

In the autocratic (bureaucratic) structure there was a marked increase in quarrelling, hostility, scapegoating, damage to equipment and a reduced creativity, initiative, commitment to, and time spent on, the task. Laissez-faire with its absence of leadership, rules and procedures produced a similar pattern but also included feelings of being lost and inadequate which were relieved by ridiculing the weaker and less competent. Democracy produced greater vitality, creativity, cooperation, commitment to, and time spent on, the task. These differences continue to be reaffirmed as in the note on 'Laissez-faire vs Democratic Groups' (Part II).

In fact laissez-faire continues to be a major concern and mention of it pops up in various places in both Parts II and III. It has contaminated many variations on the methods described in here because so many people cannot see or do not wish to believe that it is not democratic. Which only goes to show how far there is to go before we have a democratic culture where there is widespread understanding of this philosophy and way of life.

During this early period, the term **Action Research** was coined to describe the method of testing and developing theories by creating and changing practical, action based settings. The philosophy was 'there is nothing so practical as a good theory' and its operational form was expressed as 'you don't know how a thing works until you change it'.

The excitement of these results created a wave of attempts to introduce democratic forms in the real world of work and the **second major landmark** was erected in the English coalfields (Trist and Bamforth, 1951). British miners had traditionally worked the face in cohesive multiskilled teams but industrialization designed to increase productivity brought with it the one-man, one-skill job, destroying the old team structure. Rather than the dramatic economic benefits expected from the introduction of 'scientific management', there was an increase in absenteeism and accidents amongst other phenomena.

The social scientists were called in and discovered a pattern of four interrelated 'defence mechanisms' against the new work patterns. Named Informal Organization (forming cliques), Individualism (competition, playing politics), Scapegoating (passing the buck) and Withdrawal (absenteeism, 'psychosomatic' illness), they corresponded exactly to the effects of bureaucratic structure found in 1939, thereby demonstrating that the relation of structure and effect held regardless of artificial or real setting. Needless to say, the only cure was to

design and implement a variation of the old team structure geared to the new technologies. Socio-technical analysis was born.

Again, this work excited considerable attention and was followed by intensive conceptual as well as practical exploration (Emery F, 1959). It created the groundwork for the **third landmark**, the Norwegian Industrial Democracy project (Emery and Thorsrud, 1969; Emery and Thorsrud, 1975/76).

Norway entered industrialization late and although there was resistance to its introduction, a war torn economy demanded a national effort. Thorsrud, a resistance hero and social scientist saw the application of the coal study findings as a way through and called in the Tavistock Institute socio-technical team. An historic tripartite national agreement was signed to test, through action research, democracy in four of Norway's key industries. Years of effort were poured into the analyses and redesigns and it was pronounced a success - the first demonstration of planned socio-technical change at the national level.

There were two major consequences of the Norwegian success. Firstly, Norway became the destination of an immense 'tourist trade'. Anybody who was interested or thinking of democratizing their workplace felt a compulsion to see the new systems in action and this created a rash of new problems for the organizations involved. Indeed, to this very day, we have platoons of Australians trooping off to Scandinavia to study the effects of democratization which, as I discuss below, is a silly and expensive demonstration of the cultural cringe.

The second consequence is now known as 'paradoxical inhibition,' a concept derived from Pavlov's classical experiments on conditioning dogs. It means that the areas or people closest to the changes feel most threatened and develop a resistance to them while others at a safer distance adopt the changes. It is now recognized that this is one of the consequences of treating structural change as an 'experiment' and focussing attention on it and the 'guinea pig' people involved. In the Norwegian case, there were certainly other influential factors such as the more advanced industrialization of Sweden but for Norway, it meant a slow diffusion while democratization jumped the fence into Sweden and galloped far beyond.

The Fourth Landmark: Participative Design

Recognition of paradoxical inhibition was a contributing factor to the advent of Participative Design which is the fourth landmark in this

potted history. The main factor, however, was the return of Fred Emery to Australia in 1969. Some enterprises and unions in Australia has heard of the Norwegian ID program or the work in the UK and were ready to give it a go. Fred was not only the established leader of democratization, he was also the only person in Australia who knew how to do it. He had more work than he could handle. Remember that at this stage, all the work had been done by those trained and experienced in socio-technical analysis and design and it was an extraordinarily time consuming and intensive task. It was a job for the experts!

Fred swung into gear with a two pronged attack. One, to train up a competent team to democratize Australia and two, to find a way to speed up the process. It was the second that proved the breakthrough. A major part of an old style socio-technical analysis entailed the social scientists clambering all over the plant or office, detailing every measure of input, output, transformative process and social system until they were sure that they knew how the place worked. But of course, there are already people who collectively know all that: they are the people who work there. Moreover, they already have ideas, and in many cases strong views, as to how their work sections can be changed for the betterment of themselves, their mates and the enterprise as a whole. By pooling their knowledge and initiatives for change, they themselves can redesign their workplace.

This is the essence of participative design.

As soon as Fred realized that the workers had already conceptualized the need to move to a more satisfying and productive design, there remained only the need to create optimal conditions for constructive utilization of the mutual trust required to produce a genuine structural alternative; one that would through its processes of creation and implementation provide the conditions for continued learning and adaptation towards fulfilling joint purposes.

This again was the subject of action research. The merging of the series of DHRs (Development of Human Resources workshops) with Fred's independent efforts provided the tests which resulted in the basic refined tool box of concepts and processes that we carry today and give to others as they embark upon organizational and cultural redesign. The resulting process bears little resemblance to that conducted before 1971 and because of its advantages has spread widely.

We first published Participative Design: Work and Community Life in 1974. It was a slim volume of 14 pages and as it had a shiny gold

cover, we called it 'the little golden book' after the popular children's series. By that stage we knew that the concepts and practices it described were worth their weight in gold for making effective organizational change but more than that, we had seen the effect of the ideas on people - even those for whom a democratic arrangement at the moment was a far flung dream. But it was not so much a dream as a vision to be realized and it thus created expectations and other undercurrents which are to this day working themselves into reality.

Concurrently we had been developing the Search Conference, a highly participative form of planning, and the early seventies were a time of great cultural excitement and change. But diffusion and change bring their own problems. By the middle seventies, Industrial Democracy (ID) became a band waggon offering a grab bag of competing ideas, speculations and practices sometimes drawn indiscriminately from the academic melting pot and flung back into the fire beneath. While some were brave new thrusts towards a more desirable future, others had been tested exhaustively and found wanting. But many of the newcomers to the field had not done their homework and the resulting confusion did considerable damage to the original concepts and practices. Some variations on the Search Conference, for example, proved positively inimical to its goals and in some cases, the name was used without any attempt to resemble the processes involved. It is really only in the last two or three years that clarity and credibility have begun to return to the field.

One of the results of this damage done, particularly in the ID field, was that many of those who had grasped the participative concept and were intending to use it, went ahead and did so but without any great fanfare or publicity. After the first great wave of media and other attention, silence descended and the cry went up - 'Industrial Democracy in Australia is dead'. In 1988, the cry is that ID has risen from the dead but the truth is that it spent many years playing possum, waiting for a social climatic change. There has been a similar pattern developing in the US over recent years but for different reasons.

These problems began to surface quite early and are illustrated by the difference in the introduction to the first and second editions of the monograph *Participative Design*. The first (early 1974) said simply "these two papers are meant to provide the essential 'guts and guidelines' from social science experience for raising the quality of work life". By late 1975 we felt it necessary to add the following:

"There has been nothing in our experience in the last couple of years which has caused us to revise the basic

concepts laid down in this little book. Our experience has further confirmed that this conceptual tool kit is effective in democratizing an increasingly wide and various sample of organizations and groups.

What we hope to do in this introduction without cluttering up the main text is to set more firmly the context into which this book fits, and to clarify a little more the concept of democracy within. Historically we have lived with two quite distinct threads of democracy. They can be described as representative and participatory. The following examples of representative forms are included to make quite clear what this book is **not** about.

Representative forms

- Joint consultative councils
- Workers directors
- Works councils
- Co-determination
- Worker control
- Town councils
- Advisory committees, etc

Such formal mechanisms for democratic consultation have been studied, analyzed (Emery and Thorsrud, 1969) and found lacking in their ability to meet the day to day requirements that can only be met by first hand involvement. This book is concerned with precisely this latter; the need for participatory **first level** forms of democracy which are appropriate to the nature of people as purposeful systems.

Throughout the history of the democratization of work program there have been critical phases in the development of ideas about how to introduce the concept of participatory democracy. For a long time it was believed that there might be some productive activities so tied to one-person-one-machine that they could not be democratized. It has become clear that if there is a managerial function to coordinate and control the work of a number of people then there is always room to involve them in self management of at least some of the coordination and control. A democratic social structure can be brought into being in so called technologically determined situations simply by this move. It is the devolution of levels of management function to a work group with the responsibility that this entails which is

the critical leap from bureaucracy to democracy. **The more that a group manages itself the more it is democratic.**

Clearly participative design does not necessarily include or preclude change in the technical system. A variety of experience has shown that a self managing group can muster and implement ideas for improving the technical system it works with at a level of ingenuity not reached by others". (Minor editorial changes have been made from the original.)

Participative Design has been directly exported from Australia to Norway, India, Sweden, Canada, Holland, USSR, UK, USA, and NZ. In 1973 it was introduced into Norway and India and at the Summer School of the International Council of the Quality of Working Life held at Fleveroord in Holland. From there, active young teams spread it into several European countries and Israel and from there, it moved through close collegial and other contacts to such countries as Peru. Its diffusive potential is unlimited in the sense that minor cultural variants are the rule while the fundamental dimensions of locus of responsibility for coordination and control remain unchanged.

The fundamental and proven assumption of participative design is that maximal effectiveness is obtained only by designing in the unique circumstances of people and environment, in **your place**. The tools themselves have proved to be cross cultural but their application and the final product in terms of a first new design is a matter of the creativity and collective concern of the participants.

Among the benefits of a genuine participative design is that it goes a long way towards solving the problem of resistance and paradoxical inhibition. Involvement evokes powerful feelings of psychological ownership and as the interests of the involved have been taken into account, so there are less people to resist the change. This on its own is an overly simplistic statement but the principle holds. If the change proposed has been sufficiently broadly discussed to have encompassed the concerns of the potentially disadvantaged; eg, middle management, and they have been instrumental in the resolution of their concerns, then the stronger it becomes. This assumes that at the beginning of the process, guarantees will have been given as to the active sanctioning of the process and its outcomes. We are not discussing here talkfests, sensitivity or coping, 'how to adapt', personal development activities. We **are** talking the hard realities of structural and economic change and obviously, every participant will be in there attempting to obtain their most optimal solution. The key here, of course is strategy and that which has generally been adopted for success is that of the Indirect Approach (Hart, 1946; Boorman, 1971).

This is the broad front approach; the opposite of the single site 'experimental' or 'demonstration' strategy. Instead of a redesign taking place in one area, a redesign workshop will, for example, consist of four or more teams who work in parallel on their own areas and then compare notes, or who work with another team functioning as a 'mirror group'. In this latter case, the groups swap roles for the second round of redesign so that each has the opportunity to work on their own area with the assistance of a team which can query their unspoken assumptions and other matters taken for granted by those whose area it is. This was the basic design which we employed in the DHR workshops and it clearly provided multiplier effects for learning (see also 'Further Learning about Participative Design', Part II).

A Comprehensive Open Systems Approach

Throughout these papers there is an implicit emphasis on the integrity of the methods, their coherence and consistency. To every extent possible they have been designed and are managed to meet the criteria for effective communication and maximal learning of and for democracy. While many of these look like radical alternatives to what we have come to understand as education or learning, they are actually very simple and basic features of every day life as it is practised in informal peer and friendship groups outside the institutional infrastructure. That is, they are the fundamental forms of relational structure people choose when they are free of bureaucratic constraints. Clearly, they are of the type which employs as many of our human capacities as are necessary at the time, including the abilities to consider the past, anticipate the future and plan for it. The conjunction of an inherently democratic group structure such as found in a group of mates (of both sexes) planning their weekend using the local vernacular, spoken language, is a pure prototype of the purposes underlying the new methods for learning to be democratic. It is a sad reflection on our culture that although everybody knows how to be democratic and still does do it, it is considered inappropriate behaviour for formal organizational business.

It is one of the great strengths of these methods that they are essentially simple, using our greatest skills as conscious communicators with spoken language. Has there ever been a culture in which people did not confer? The spoken word, dialogue or conversation is the essential glue of humanity (Ong, 1967) and all of our participative methods are built around group (large and small) task oriented discussion. These participants are doing their own qualitative research. This is a belated recognition that 'research' is an age old part of the human condition - to be curious, to learn and to pass on to others. It is

also, incidentally, a recognition that humanity and its concerns cannot be adequately captured by sterile, objective 'empirical' techniques (Emery M, 1986). Learning, influencing and being influenced by conversation are intimate elements of belonging, perhaps the most basic human need (Greco, 1950).

To further this learning, the ground rules of the Search Conference ensure that no hierarchy is either built in or allowed to develop between participants, regardless of their status in everyday life. Designed to increase the effectiveness of strategic planning by giving people more control over their long term purposes and directions, each participant is there because they have in their heads a particular piece of the jigsaw puzzle which confronts them. Because they are equally necessary to the solution or restructuring of the puzzle, and they often come from quite disparate organizations, hierarchical status is irrelevant to the task.

But in a Participative Design Workshop the focus on the natural activity group with or without a deep slice team often makes it difficult to avoid established status differences. Basically the bureaucratic realities are reflected in the beginning of an organizational redesign task; it is common for many staff not to know what others really do in their jobs or how they perceive them, and here it is critical that they do know and appreciate other's positions and duties. It is necessary, therefore, for time to be spent redressing this situation, and throughout the whole of such a project which may be extended, the process managers must constantly be alert for the destructive use of bureaucratic status and therefore, their need to intervene and restore equality of relationships.

Another dimension common amongst all the various forms of participative activity is our elevation of the importance of direct perception or ecological learning. As is implied above, we all directly extract meaningful information from our environment and all our varied perceptions are valid. To adopt this stance as it is spelt out in the paper 'Educational Paradigms' is to advocate change as it is now clear that our accepted version of 'education' (teaching) has been fabricated from doubtful premises. The unitary human perceptual system does not operate as a machine in a Newtonian mechanical universe or environment. Essentially, this new understanding elevates everyone to, and equalizes them, at the status of researcher, learner, teacher and resource.

The effects of all these changing concepts filter slowly through the cultural morass and can be traced through the proliferation of citizen action groups, small political parties and schools and the resurgence of

concepts such as that of the Science Shop which serves as a link between community groups needing information and specialist research. Science Shops provide free or very cheap access to the privileged resources of elite establishments. The Australian 1987 higher education green paper (now white) is perhaps a most powerful symbol of governmental acceptance of community pressures for educational democratization. To survive, research and teaching institutions must respond to the groundswell of public confidence in their own perceptions and doubts about the value of abstract knowledge which is protected and controlled by those institutions. And despite the problems, many do respond because they too have been touched by the new forces and values in the environment.

Another dimension of these barriers involves the whole concept of 'structure' and the previously sacrosanct status of representative systems and the representatives themselves. It has been obvious to some for a long time that representative systems have failed to deliver democracy and in fact, only add to the financial and other burdens that are carried by the populace at large. Yet often when the subject is broached, the argument is put that 'we do have to have some structure - do you want anarchy?' This argument reveals the depths of the belief that dominant hierarchies are an inevitable part of life.

They aren't and the papers in Part III clarify the fact that governance structures designed on the second design principle are probably more detailed and strictly controlled than are those of the current representative system. In this they are directly analogous to the organizational level where goals, rules and conventions must be more detailed, carefully worked out, explicit and known in a democratic structure than any needed in a bureaucracy where buck passing is the name of the game. What is a representative system if it is not just a higher level form of the ubiquitous design principle 1?

In the field of education, the debate is probably more polarized and even less well understood. As the note on 'Structured vs Unstructured' (Part IV) points out, the dichotomy is inadequate, serving only to create a conceptual morass. It, the debate, is currently surfacing again under the rubric of a return to the 3 Rs and better discipline. But here there is the complication of *laissez-faire*. It is often difficult to establish whether those who advocate the return to 'structure' are opposing *laissez-faire* or democracy as they are so little differentiated. We therefore have a three way confusion.

Let us not forget either the Master Servant Act which still determines the structure of most paid employment and exerts a continuing influence on many parts of all our lives. It enshrines in law,

bureaucratic structure and personal dominance. It is often forgotten in the rush by some to 'humanize' organizations that organizational structures are legal entities and that employees need to understand industrial relations and the changes taking place in their workplace. Nothing is worse than the despair of a self managing group or organization which has been successfully sabotaged because its experience had been confined to the practice and who have not been able to articulate or argue their case on conceptual grounds or with outside support. One of the great benefits of the last waves of industrial democracy is the recognition that ID or democratization cannot be taken out of the industrial relations context (Cole et al, 1986). **Genuine democracy requires widespread and contextualized conceptual and practical understanding if it is to stand a chance against the forces of autocracy.**

This volume is an accumulation of our understandings of why systemic, structural change is necessary and desirable and how it can best be achieved. Participation can apply in any area and there is no longer any reason to assume that democratization applies only to the small group level. There is a general need to raise the basic and common human ideals through processes in which the people intimately involved in those decisions which affect them affirm their ideals and design their own futures. In the course of doing this, they almost always take into account their respect and regard for other humans, other species and the environmental interdependencies on which they too are dependent.

The various papers here have either been revised over time as we have learnt from our experiences or are new, and it therefore contains our most recent considerations as to concepts, tools and **process**. The emphasis upon process is necessary as one of the early resistances to democratization arose from the perception that you had to have a semi-autonomous work group (SAWG) now known as a self managing group, which looked like the classic text book example.

You **do** have to have democratic structures to build in such critical features as mutual support, respect and learning but most grass roots designs deviate from the schematic, abstract models used to illustrate the concept (Part II). Different groups choose different levels of autonomy for starters knowing their design will evolve according to the development of their people and the demands of externalities. Lots of workplaces have an old man who just wants to go on doing what he has always done and who has not experienced the woman who is so lacking in self confidence that she is reluctant to try anything which tests her abilities.

A Participative Design exercise done well recognizes and makes clear the value of individuality. The process not only allows but places a premium on the idiosyncrasies and circumstances of the people involved. The design must be optimal for all those involved. In time, many of those who opted to stay out of the new arrangements change their mind and gradually become integrated into the democratic arrangements. But this is a learning process for them, without compulsion. The exceptional case is that of a supervisor who by claiming the right not to change is thereby denying to others opportunities to take responsibility and grow.

Like its predecessors, this volume concerns itself with the ways in which people can begin to take charge of their own affairs and mobilize their hidden potentials. We eschew, in the main, the fashionable trend towards 'stress management' and other similar techniques and philosophies which really boil down to the message that as you cannot change the system, you had better learn to cope with it; ie, that people are powerless to change the organizational context of their lives. The basic assumption here is, as above, that there must be a bureaucratic structure. Such attitudes just make it more difficult for many to take seriously the task of learning to actively accept responsibility for basic change.

While there can be no argument against people looking after themselves, the 'I'm alright Jack (so stuff you)' attitude, so prevalent today, is a denial of the generic conditions created by organizational structures. This attitude is no more than an elaboration of the increasingly dissociative nature of our culture, an expression of responsibility centred entirely upon the self.

Democratic structures provide opportunities for mutual support and respect and thus learning of the other as an essential prerequisite for preventative medicine at the cultural level. Individual responsibility must be complemented by an awakened sense of collective responsibility. The whole debate involves much broader thinking than has generally been the case up to now. A coherent framework of concepts informs this view and those interested in this more detailed underlying theory can consult the references.

This brief survey only highlights some of the consequences of a social science which appears to have neglected its responsibilities to the community. While it has not been fashionable or in the career interests of the individual social scientist to make such statements or to pursue action research which serves both academic social science and the practical affairs of people, it is encouraging that there is a revival of such concern.

Many during the seventies slowly became conscious that we were reaching a critical point in our culture, a possible turning point where subtly but collectively, the decision will be made about our future directions. As the first paper points out, there is a choice to be made: it will be made but by whom and towards what purposes? We, the authors, make no secret of our values: there are no hidden agendas here. It is better that any choice be an informed and conscious one than a slippage into dependency and dissociation or a rigidly imposed and, therefore, superficial democracy. The question is simple: do you want a democratic society or don't you? The answer is yours.

A Note on the Differences between Australia and North America

It is not unusual in Australia today for the people I am addressing or working with to assume that democratization is an American invention. Similarly, academic colleagues who are entering the field frequently quote only the most recent publications of which there is currently a flood from America. But, these rarely acknowledge sources other than American and thus ignore the roots of their work. Much of it appears to be a case of re-inventing the wheel with the replication of all the early assumptions and dead ends.

There is very little history of American origin as diffusion into the USA has, until quite recently, been slow for reasons which appear to concern a deep cultural substratum, totally distinct from that observed in Australia, Scandinavia, Europe or India, (in my experience and also from reports of colleagues). Canada appears something of a mixed bag but the recent demise of the Ontario Quality of Working Life Centre (June 1988) could be taken as a sign that trends towards Americanization have become dominant. The value trends so strongly observed in the US and competing in Canada at the moment are, of course, also observed as emergent and potentially damaging in cultures such as the Scandinavian, often to the chagrin of the native professionals in the field.

At the most superficial level one sees the immense amounts of money paid to visiting US academics and consultants. These often have no more than a passing acquaintanceship with the core of the field. They may once have interviewed a foreign manager or surveyed the 'alien' literature. But they are the well marketed, prestigious high-priced experts who grace the opening of a conference, recruiting local money and bearing gifts of easy fix-it solutions and promises.

What is this American legacy? While it is dangerous to generalize about such a turbulent nation whose regional and cultural differences are so apparent, there is still to be observed a widespread reluctance to change anything more than the superficialities: a reluctance to change the system or 'the American way'. It can be seen as a deep form of authoritarianism and ambivalence: conflict and aggression are everywhere in America from the streets of the inner city ghettos to the highest levels where newspeak is easily absorbed into thick, luxuriously, wall-to-wall carpeted minds.

It is not difficult to find remnants of the old collective culture of America but it has been so overlaid by the belief in competition, individual achievement and fear of 'communism' that individuals often have to perform intellectual gymnastics to extricate themselves from the inconsistencies and paradoxes that arise for them in confronting democratization. Frequently they fail. It is right and proper, says the rhetoric, to help one another but changing the system is something else, even though it means being better able to help others.

The problem lies in the fact that democratization is a radical change to 'the system' as we know it. It is about changing the fundamental power relationships in our societies and cultures. As such, it will automatically cause distress, anger and disbelief within anybody who has given allegiance to or has derived benefits from 'the system'. The heart of the problem is the old 'love it and hate it' phenomenon.

There are many vested interests in maintaining the status quo. Any student of the processes of changing bureaucracies knows that they breed informal or 'shadow' organizations which in many cases run the show. America is a mass of shadow organizations - they derive their power from the formal structure, the rhetoric and the paradox. They are loath, therefore, to destroy their power base. But shadow organizations do not run the show in the interest of the total enterprise; they really only look after the interests of their members.

However, 'the times, they are a-changing' and some have chosen to look fairly and squarely at the whole and its direction. They make their judgements on that basis. The successes of the British and Scandinavian experiments of the 40s, 50s and 60s, and, paradoxically, one of the first government reports to appear, Work in America (O'Toole, 1974) may now be bearing fruit.

That latter was a detailed exposition of amongst other things, the effects of bureaucratic work structures on people's mental and physical health. It did little at the time to change the attitude and values of the American people to their organizational system. The old was too

strong and America was too powerfully insulated for the message to be heard. To distance themselves from this problem they developed and accepted the concept of QWL. In essence, QWL is a rag bag covering everything from better human relations, individual job enrichment, health and safety to genuine democratization. Hans van Beinum (1987) has detailed the problems with this concept.

A basic change required nothing less than a broad front strategy of information from the outside, the deterioration of America's place in the world and its domestic economic paradoxes and gathering problems.

For those of us who have been brought up to regard America as one of the great bastions of freedom and democracy, their struggle with their own internal authoritarian paradox has been instructive. But one thing is clear: it doesn't matter whether a regime is blatantly or subtly oppressive, human ideals are always simmering away underneath. When they reach boiling point they surface in ways which accord with the nature of the environment at the time. America has been very slow to democratize but it would appear that they are moving as prejudices break down under the weight of economic and other older cultural pressures. Recent publications such as Weisbord (1987) will help.

I have spent time on this because it illustrates the ways in which participative philosophies and methods wax and wane with cultural cycles. While Australia is tied internationally in many ways which influence our directions, we appear to have been lucky in the strength and depth of our cultural roots. Australia has been and is a leader in democratization although this has not been generally acknowledged in Australia. This is not an academic observation. Overseas visitors constantly remark on our strange every day democratic conventions, indeed, it bothers some when the waitresses and waiters of the new tourist industry decline to see themselves as servants and assert their rights to human dignity. Democracy lives in the environment ('anyone can die out there, mate') and the flesh and blood of Australia, and there is, therefore, a special responsibility for Australian researchers to describe, analyse, and diffuse their findings.

In Summary: The Path Ahead.

As this historical overview shows, the track began in the world of work and the original analysis of work as the leading edge of change was undoubtedly correct. From the huge effort poured into this sector, we have learnt much. New needs arose, however, from the transition from a relatively stable to a dynamic environment, characterized by

relevant uncertainty and discontinuities. These were needs for new, more effective means of planning, educating and governing. This transition phase has continued to intensify and the same needs are now more obvious and more urgent.

Over time the fragmented needs have coalesced into a coherent need, not simply for democratic workplaces or communities, but for a participative democratic culture; one that reaches into and ultimately transforms the hidden niches in our society as well as its institutions. The form of this book follows the form of the need- first to make it explicit in terms which begin to provide the means to the end. There are now well established pointers to this future and it is the most fundamental of these that we present here.

Part I details the agenda and one major means (our direct perception) we must urgently begin to practice if we are to revitalize our people's confidence in their own abilities and potentials. Without this, participative democracy is a dead duck.

Part II reviews some of the highlights of our learning from the previous waves of exploration into the world of work, but in today's context where there is still the danger that powerful concepts such as group responsibility will be interpreted and applied mechanically as job rotation and/or multiskilling.

Part III presents the major papers on extending participative democracy into the area of governance. These lessons are applicable in many fields as indeed is the modified model of democratic management discussed in 'Participative Design' (Part II).

In Part IV we really begin to tackle the education system, clearing up some traditional misconceptions and describing some of the means tested so far for practically transforming education into a vehicle for the realization of a more participative democracy, one which intrinsically provides more and continuing learning.

This introduction will already have alerted the reader to the track being long and fraught with dangers both of the past, present and future. And, of course, it is not difficult to understand that the learnings encompassed here are primarily the work of adult/continuing educators, those who have never really been admitted to the institutional hallowed halls of 'learning'. They have not traditionally been so subject to the academic, managerial or centralized institutional pressures which would incline them to the quick fix. Charged with the responsibility for 'educating the community' rather than the already

educated elites, a freedom has been extended. This is gratefully acknowledged.

If this book does nothing else, it should also alert the reader to the diversity of effort that is needed if 'real', participative rather than representative, democracy is to be approximated in our cultures. A 'broad front' approach is now essential. Rather than being seen as a proliferation of ratbagery, every effort that employs good ideas and practices must converge to increase the awareness and practical know how for the continuation of the momentum for more real democracy. It is still important, however, for idealistic practitioners themselves (for whom this book is written) to know how the whole fits together.

This book then encompasses a vision and the authors make no secret of the values they bring to this. We simply hope that we have conveyed some clear and practical guidelines for those who share at least part of that vision.

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PART I. THE CONTEXT

'The Agenda for the Next Wave' details the convergence of the many problems which confront us, to the point where we have become aware that we face not simply an economic but also a cultural crisis; a crisis of western civilization.

It traces and analyses western history, both ancient and modern in conceptual terms, specifying the choices we have made with their consequences as above. The alternatives we must now choose between are outlined and it is strongly argued that we must choose a coherent set which embody our humanity and our needs for an associative society if the west is to survive as a democratic culture or civilization

Ecological perception is one of the factors advocated in the Agenda paper and 'Educational Paradigms' elaborates this key element in the underlying rationale for the structures and processes advocated in the rest of the volume. The paper begins by examining the old paradigm, the assumptions and beliefs that for so long tied us to a mechanistic view of ourselves and defeated so many attempts at educational change. Experience has shown that while reform was only at the structural and processual level, it inevitably floundered. Only by moving the challenge to the more fundamental level of epistemology, our theories of how we learn and know, would we open the resistances and barriers to debate and hopefully change.

The basic challenges to the established paradigm entailed firstly separating the concept of object from that of the medium which conveys knowledge of it; or figure from ground. For example, radiant and reflected light are different media. Only reflected light conveys meaningful information to the human perceptual system. Secondly, Heider upped the challenge by hypothesizing that the environment was an orderly structure of information that we are adapted to directly know. Gibson confirmed the validity of this hypothesis by showing that we detect the pattern and meaning of changes in the environment. From here the emphasis had to change from fragmented, discrete bit of sensory information, at best incomplete and reliable, to direct, unmediated knowing, the product of a **perceptual system**. This system is attuned to the invariances or unchanging patterns evident in the constant flow of events and movement in the environment.

From this successful challenge to traditional assumptions has been derived a whole new epistemology or theory of how we know. We can see that we no longer need rely on a taxonomic hierarchy of things or abstract 'generic' concepts but 'serial genetic' concepts which are the product of continuously extracting meaning from perceived patterns. Both paradigms arrive at sophisticated theories of how the world works but those of the second paradigm are usually referred to as 'common

sense' rather than scholarly knowledge. When used by the established academic elites 'common sense' conveys the devaluing of perception and the learning derived from it.

Emery goes from here to discuss with examples, the many changes this new paradigm will ultimately effect in our educational efforts. If we achieve meaningful, adaptive knowledge directly from perception, we are not reliant on mediators (teachers) and their extensive injections of abstracted knowledge. But if we are to pursue this line as part of the movement to revalue human potential and dignity, the move to a more democratic society, we need more practice in effectively using our perceptual system. The focus of the system changes from the transmission of information to educating perception.

The new methods described here for helping people learn about participative democracy are designed on the second educational paradigm, using people's direct perceptions, experience and ideals, towards those ideals, and fostering their confidence in all of these phenomena.

Part I argues the why of a new way, in detail. As spelt out elsewhere in this volume, it can be dangerous to try to practice something without understanding the reasons for and behind it. We have many examples of how that has gone badly off the tracks. History has also proven that it is insufficient to institute democratic organizational structures without an adequate level of epistemological change and understanding. Any quiet, educational democratic cultural revolution will flounder without this latter.

If we do not appreciate the reasons for the radical changes required, we will not change what is in our heads, or more accurately, attempt to come to grips with what our heads are into. This is a major rationale for participative approaches to change. Open systems methods of learning encompass both what our heads are into (a changing and uncertain environment) and how we must begin to use our perceptual system if we are to make the changes required. These two papers, therefore, detail the perspectives from both sides of the system/environment boundary.

THE AGENDA FOR THE NEXT WAVE

Fred Emery, August 1985

My concern is with the next agenda that must be engaged upon in the next couple of decades to overcome the essential failure of social science in the postwar years. It has failed to meet, or to contribute in any really deep way (with exceptions) to the programme initiated by Kurt Lewin in his posthumous paper 'Frontiers in Group Dynamics' in 1946.

Now if one is going to draw up such an explicit agenda, it must be based on the agenda that the society is currently setting itself. It may well be that when drawing up some sort of reasonably convincing agenda of social issues, we might look at it and say 'we are not really in much of a position to contribute to any of the important items on that agenda'; that may well be the case. Or it may be that we can identify some of the items on the social agenda that are significant and to which theoretically we should be able to contribute, but we find that we are not in a position to do so because we lack resources. Apart from our resource of a well educated population, there are also increased resources in social science now. We need only look at the post 1945 expansion of departments of sociology; psychology; psychiatry; and anthropology and biology. We do have vast resources but we may still conclude that there is no way these resources can either be released from their commitment to academic disciplinary pursuits or that for some reason the population will be reluctant to operationalize such an agenda. When a culture draws up an agenda there is an implicit sort of pressure as to when these things need to be achieved, and how they will be orchestrated.

In our considerations we should remember the extensive and radical changes that are starting to take place even in universities. Many of the major advances in what I call Open Systems Thinking (Emery F, 1981) are now being made in areas such as linguistics and ecology. By the social sciences I mean all of those sciences that contribute to our understanding of human ecology. That clearly covers even areas such as physics which is turning to ecological physics, the physics of the world within which humans live. Some physicists continue with the subnuclear quantum universe but there is another physics which quite properly applies here and which the Gibsonians have had to invoke. There is a new science of chemical ecology emerging as we learn about the human effects of pollution, for example. There's also a science of ecological biology which applies to human ecology and takes us a long way from rats in mazes. Underlying these shifts is a basic change in the way we perceive ourselves in our world, our root metaphor. That metaphor or world hypothesis which is emerging is called

'contextualism' and we return to it below. But first, let me explain why it is becoming critical that we raise our consciousness of the emerging social agenda.

Increasingly and internationally, there is a sense of crisis. Both the economic and cultural dimensions of it can be discerned and these need to be analysed if our dimly felt and perceived crisis, and therefore our similarly perceived agenda, is to be clear and understood. For such a task, the first issue is an appropriate time horizon. Is it an agenda for tomorrow or for the 1990s?

It was only after 1970 that we detected the breakdown of our assumptions of assured economic growth. That has turned our attention to the fifty year Kondratiev economic cycles. They have been established empirically over the last two hundred years of industrial society. They are clear through all of the countries involved in the world economy (Emery F, 1978). It was also clear once that was established, that we needed to go back and examine the phases and the depth of these economic crises.

These phases of struggling out of the fifty year depressions were all characterized by a tremendous efflorescence of ideas and institutions built around ideas. Many of the ideas had in fact emerged before this period of efflorescence but people coming out of these depressions were confronted with challenges to the expectations they had had for the previous forty years or so, expectations which had guided the way they brought up a new generation of children. The ideas that were scattered around were treated almost as trivia before, as Schumacher's 'small is beautiful' was treated as faddish for a while. As Karl Marx has said "there's a time when ideas become a material force in the way a society changes". I'm suggesting that these periods following the depths of the depressions are such times.

This current economic crisis is more serious than before because more nations have been brought tightly into the international economy with the growth of the transnationals. A 'post industrial' society may emerge, but as we got further into the matter and tried to examine and identify what are the basic conditions for it in terms of infrastructure, social structure and social control, it became clear that some of those basic conditions were not present. We couldn't even see them on the horizon. Some of them were, but for the others, two or three out of the five, we could see no solution at all. A typical example is a power base. Pulling yourself out of these troughs always seemed to require the emergence and development of a new more broadly usable and cheaper source of power. We thought we had that with nuclear energy in the sixties and the early seventies but the bottom fell out of that; it was not a cheaper source of power. It was not going to do for this depression what gas had done for the one before and steam turbines had done for the one before that. But that just meant that a much

higher probability had to be given to the possibility that we were dealing with an horizon which was not a fifty year one, but something more like a two hundred and fifty year horizon. In other words, a movement from an industrial based society to something radically different which is not just a straight line projection of growth in per capita GDP.

It then became clear that the challenges that were emerging were deeper than this type of structural change: they were, in fact, cultural changes. When we tied together the series of waves of beatniks, hippies, punks, etc and the diffusion and internalization of many of the values of the 1960s, we see this fundamental challenge to our traditional cultural assumptions (Emery F, 1978). I'm quite convinced in my own mind that what we are facing is in fact nothing less than a challenge to western civilisation itself. A challenge going back to the choice that was made when the intellectual achievements that Plato made in the latter stages of his life were overruled, turned under and buried by Aristotle's school in Alexandria. The social choice of that time set us on a path that gave us a basic pattern of civilisation and it is now that pattern which is under challenge. Many of you would have read Stavrianos in his Promise of the Coming Dark Age (1976). He has suggested that the challenge might have gone back to the period of 5th century roughly, but I'm going further back because of what I think is involved in the philosophic formation of the foundations for our civilisation, prior to the Roman empire, not after.

This challenge has now to be taken seriously. The question had been raised by Nietzsche and others in the crisis at the end of the nineteenth century; it's been raised by Spengler and subsequently of course by Toynbee. The reason I think it is serious is twofold - that this is the only civilisation to our knowledge - and here I'm basing myself on Toynbee's massive study of all the known civilisations - which has ever based itself or claimed to base itself on what we call design principle two. All the other civilisations, those prior to the emergence of western civilisations and those co-existent with us such as China and Japan base themselves on the first design principle (Emery F, 1977).

The first, the usual design principle for getting stability in large civilisations, which comes with the emergence of urban areas and the network of mutual reciprocal relationships that are required to enable the urban centres to emerge, involves 'redundancy of parts'. One of the ways you can get reliability in a system of unreliable parts is by building in 'redundancy of parts' so if one part fails, another is there to take over. For example, the American shuttle has four computers working in parallel with a fifth on standby. As we see reflected in the price of labour and in the life expectancy of most people in design principle one countries, individuals are prepared for a specific function in life. Enough of them are prepared so that if someone

drops dead or is kicked to death, there are still sufficient to get on with the job.

The alternative principle for getting reliability in a complex system is design principle two, building in a 'redundancy of function'. You over educate all the people who are constituent parts of the society so if any one person fails to carry out a particular function during that time, then someone else has the additional functions at their disposal; the capabilities to help out.

If you design on principle one then it is essential that you have a control body, some other specialised group of people who will decide when a person is allocated to one part of the system or another. The parts can only do their own bit, they cannot, not knowing the other bits, decide whether and when they are moved around: the epitome is the assembly line. In other words, you need some hierarchy of control, 'a dominant hierarchy' in such a society; there is necessarily a stratification of the worth of a life and an elitism.

In moving to the second design principle, theoretically all that is required is the multiple functioning parts, parts who are equipped to share a sufficient appreciation of the field within which they are mutually operating, and a sufficiently extensive but commonly known range of values to enable them to individually and collectively decide what ought to be done in certain circumstances. The second design principle should result, in large measure, in a self controlling society and not require a special control section; not require an elite or dominant hierarchy.

Differentiation of functions, heterogeneity leads, in the first design, to increasing complexity of controls and an increasing diversion of the free energy in the system to the internal control function.

In the second design, differentiation of functions (increasing heterogeneity) leads to an enrichment of the qualities of the parts without either, (a) increased complexity of the control system or, (b) diversion of system energy to the control function.

The first point is, therefore, that western civilisation is the first and only civilisation that has attempted to establish a stable and reliable society, with extended interconnections maintained over time, on design principle 2: it is the odd man out and I think that that in itself suggests that you have to watch to see whether it's a going concern. The second is that our particular experiment in time, in western civilisation, has been inherently more unstable than any of the other civilisations that we know; inherently unstable, not just more subject to climatic change or disease because the civilisation that we've had has been built on a lie from the period between Plato and Aristotle. A choice was made there and the lie is pretty simple and straightforward.

It is a civilisation dedicated to the notion of the second design and yet it is a civilisation which in practice says 'there's no way all of you characters are going live within the second design. Because of the scarcity of resources it'll only be possible for key people to be in that act; the rest of you are going to have to put up with being redundant parts'.

Now we know that if we've got any situation where there are two system principles operating then we have dire trouble on our hands. That trouble was containable by us, despite our ups and downs until quite recently. While we have historically had instability, it did not prevent the second design principle providing the conditions for a culture which was tremendously more creative than was found in any civilisation built on design principle one. The only sort of thing that would motivate a civilisation built on design principle one to be creative in any significant sort of fashion, was warring against someone else. If you look at the history of technology, even through our western civilisation, you can see that war was still our major force.

The crisis we've lumbered ourselves with is that we did, by 1944, achieve a tremendous mobilisation of our productive forces on the basis of our technical knowledge. In 1944, while masses of our prime work force were in uniform wasting production, not producing, we managed to reach magnificent heights of production. We were producing more guns, tanks and planes than the admirals, generals and air force commodores were literally able to use. We were running short of willing people at the end of the European War and in the Pacific theatre but with a still vast surplus of production. From that point, there was never any question that the argument that scarcity of resources, the favourite argument of the Malthusians and the modern day economists was effectively dead right around the world. That did not prevent us reinforcing the existence of the gap between the 'haves' and the 'have-nots'. It did not lead to that gap collapsing straight away. It was still there as a primary threat because it was still possible to use the threat of warfare. It was still possible to use that argument to demand that people subordinate themselves to the interest of the nation in order to survive.

But when warfare went from atomic bombs to thermonuclear devices, any such appeal to patriotism, love of god and country wasn't worth a brass razoo to the new generations coming up. There was little point in fighting for your country if there was no country left at the end of the fight. That pulled the last plug out on that which had held together western civilisation with this inherent contradiction.

The final straw landed when we found out that the civilisation most deeply rooted in and probably the best living representative of design principle one, Japan, was beating the pants off the Americans and Europeans. The belief in the sheer ability of our cultural model to

meet the needs of its people better is therefore under tremendous threat. The challenges to our western civilisation are mounting. A further problem is coming up which will only intensify demands upon it, demands that either we get our act together or we will almost certainly make the choice to revert to design principle one, and that threat of reversion is not an idle one. (This further factor is the change in climate world wide - Ed.)

In 1917 we saw a major section of our western civilisation, with the same sort of double faced dedication to design principle two, switch over to design principle one and a few others joined it behind the iron curtain. Make no bones about this; the other side of the iron curtain is in fact a reversion to design principle one. We also saw it in Germany faced with the last fifty year crisis. That is a threat as long as we have both design principles in our civilisation, and it's becoming more real. So there is a degree of choice and a question of when we make our choices.

How do we handle that challenge? Well, that is also pretty clear. The first step in meeting the challenge clearly would have to be total commitment at all levels and at every point in society to establish design principle two as the ruling design principle, **the system principle**. It would have to apply in every sort of group activity which one can engage; international, national, state, regional, community or small informal group. Efforts should be made to move towards establishing design principle two consistently. That's not totally impossible. Engels and Max Weber in 1895, were both convinced that you could not unleash the resources of a large major modern enterprise of the sort that emerged through the 1880s, without autocracy. We went along with that. Autocracy appeared to be the price we had to pay at work in order to live according to design principle two in other areas of our lives. Now in the past 20 odd years, action researchers coming out of the Lewinian post war tradition have shown that we can't manage and get the maximum benefit of the development of that technology **without** moving into design principle two. So what had looked like an impregnable area of autocracy has already been fundamentally flawed and undermined. If it can be done in places of paid employment, the practical lessons are that it can be done anywhere. One area I would never have thought it possible for these values and practices to infiltrate is the catholic church. But what happened? The catholic church blew itself apart with its Vatican Council and John XXIII. The current Pope appears to be encountering some resistance to his reinstatement of the more traditional lines.

Given the contradiction between those parts of our society that were based on design principle one and those in design principle two, we have had a pretty good run up till now. Still not enough to give us too much comfort unless we work to get more resources devoted to change.

We have to have it clear in our minds what our target is - we've got to get rid of design principle 1 wherever we find it, in the classroom, in the factory, in the voluntary organisation. Also, we're not going to achieve this at any real speed until people's minds (remembering that people's minds operate between them and other people and the social ecology within which they are operating) are given a chance to crystalize out the ideas and values that they are committed to. Bear in mind that the values which carry through because of that contradiction in western civilisation have been almost totally negative. In Christian society we have the ten commandments - 'thou shalt not!' They are all no nos. The idea appeared to be that if people were to hold to those negatives, then that would be sufficient orientation for them to keep a Christian civilisation.

This is hardly adequate and in as far as we have tried to move towards positive ideals, we've had the ideals of plenty, of good, of justice and of beauty. We left the economic machine to look after plenty and it's not doing a very good job of that in terms of distribution of the wealth that's been created, and it's certainly not doing any better today than in 1944. We left the ideal of good to the churches and that seems a good recipe for war. We left justice to the lawyers and the courts and we have seen similar sorts of results. In other words, we've assumed because of this contradiction that positive ideals are carried in and looked after by our institutions. With truth for example, we really believed in universities organising and running themselves in order to look after truth. They are supposed to be the guardians of truth. But we know perfectly well that if there is a challenge to the continued economic wealth of the universities, truth is not the first thing on their agenda. It is their survival. The way the universities acted immediately for the Nazis in 1934 is one example. It tells you about institutions. Now we've got to do better than that.

I have tried to formulate ideals which are appropriate to a culture based on design principle 2, not a mixed bag of principles. I've suggested such ideals were those of humanity, homonomy, nurturance and beauty (Emery F, 1977) They are those which ignore dominant hierarchies and apply across the whole human spectrum. As well, we require a different world hypothesis, from the Aristotlian, the Newtonian and Organicism. Organicism, just like Newtonianism and Aristotlianism, denied that people could have direct knowledge of the world around them. It promoted the belief that information has to be processed by special elite groups before it became meaningful knowledge. It's only with the emergence of the notion of **contextualism** that we've got a world hypothesis that starts from naive realist notions of direct perception and knowledge of the real world. It's the first world hypothesis of that type that we've had although it was and is the foundation of the so called primitive cultures of the hunters and gatherers. Contextualism was rejected when formulated by Pierce (1932) in the 1890s crisis, and again in the last crisis when

Pepper (1942) formulated it explicitly as an alternative world hypothesis. It was then given some credence but as soon as we started to recover economically and the old powers got back, it was beaten down again. But it's coming up again. You'll find contextualism around the fringes of all of the sciences, particularly in those dealing with child development, ecology and perception. This has to be our paradigm because it's the only one that's appropriate to what is happening culturally and in action research. It's the only paradigm based on an epistemology of realism. It is based on **common sense**. It's the only paradigm which has ever taken change as the reality from which we start, the others have all started from static substance as the real world. Contextualism starts from change in the emergence of quality and if we don't consciously work as action researchers within that, two things follow - we're not going to look at the world around us, the one containing the crisis we are confronting, and we're not going to be able to accumulate our findings, the results of our actions.

In making this case for the priority of educating for a change in design principle, I am of course, arguing for a shift from representative to participative democracy. This is but another way of presenting the major focus. What we've done in developing new educational methods, which we didn't realise at the time, is to work implicitly from those realistic contextualist assumptions. Search conferences would be ineffective unless these assumptions about perceptions and realism were correct. Search conferences, Participative Design Workshops and further development of matrix type organisations involve **non dominant** hierarchies. You may have a 'hierarchy of functions' as some functions will need to be carried out at a regional or national level, or on a different time scale but that does not imply that we need 'dominant hierarchies', where some have personal dominance over others as in the master servant relation.

Within the learning environments created by the 'deep-slice' groups of the Participative Design workshops and the ground rules followed in the Search Conference and related methods, people can actually experience the conditions for effective democratic discourse and purposeful work. We've made some progress in designing and developing these methods so that both experiential and conceptual understanding of the alternatives is gained; but we've got a lot more to do.

One element in particular involves the status difference between spoken and written language which needs addressing and redressing. Spoken language is probably as old as humanity itself, but written is still an innovation which needs further evaluation. We are hard-wired to speak but not to read and write. It is possible to sustain an argument that the elevation of the written was not more than another highly successful ploy by the already successful to exploit their advantage in a stratified society. Continuous complaints about the

destruction of the English language (as it was spoken and written by Chaucer, perhaps?) neglect the fact that any living language is precisely that, living and changing in direct correlation to the changing circumstances of the times.

Written language, text, has been used to keep the great unwashed in their place. Peirce's work has shown how treacherously the rulers can put down the 'unlettered' people who use only their spoken language to communicate their reality. 'If we can prevent them coming together and also believing that their conversations have validity, we can maintain control'. Perhaps the greatest power inhering in spoken language lies in its spontaneous generation of metaphors and these are most dangerous when they are immediate and apart. Far from the abstract form, people use day-to-day metaphors which are immediately recognizable and which they can also draw up as simple diagrams and/or other iconic forms of communication; eg, the cartoon. Critical and rigorous distinctions can be made at this level and rather than the academic conclusion that these do not convey precise meaning, they show that people can engage in debates and analysis of highly complex matters by metaphorically illustrating the essences of such debates.

Clearly, if we are to pursue the elevation of design principle two and participative rather than representative democracy, we must also work to return spoken language to its proper place as the prime form of human communication. That can only be achieved by discourse under the conditions of openness and equality laid down by Asch (1952). Only then do we find association rather than dissociation, or any of the other maladaptions (Emery F, 1977).

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EDUCATIONAL PARADIGMS

An epistemological revolution

Fred Emery December 1980

Introduction

In any process of increasing participation in workplace decision making one inevitably comes to a social barrier between skill based labour and knowledge based labour: between what is properly blue collared labour and what is white collared labour.

This is typically interpreted as the line where participation should sensibly cease.

In what follows it is suggested that this is a social barrier: not a barrier dictated by inherited natural differences.

The inspiration for this paper came from two sources. After delivering the presidential address to the new ANZAAS section on Communications, in which I expressed my concern at finding, for twice running, that a major medium for mass communication had proven, on close examination to be quite contrary in its nature to what seemed obvious I came across, on the same day and in the same city, a copy of Northrop Frye's Fearful Symmetry. It had long seemed to me that McLuhan must have had a central vision in order to have been so insightful, so often, about the role of the media (See Taking Stock of McLuhan, Chapter 12, Emery and Emery 1976). I had in vain followed McLuhan's suggestion that it lay in the work of Harold McInnis. In Frye's Fearful Symmetry I had my answer. McLuhan's vision was Blake's vision. Blake had seen, with great clarity the fearful implications of the Locke/Newtonian view of the world: "May God us keep from single vision and Newton's sleep".

Frye wrote this work during the throes of World War II and McLuhan was his student shortly thereafter.

To my mind Frye provided an answer to the question of why engineers kept fouling up the design of electronic communication systems - they were asked to design for a Newtonian world,

The second stimulus came from Michael Gloster. He was deeply into the study of non formal education, he was aware of our earlier work on educational processes but asked whether there were not problems about the educational process itself, not just the democratisation of educational settings. This paper is a response to that question. I have written a number of times about ways in which we could democratize

the educational process. It was only with Frye's insight and Gloster's goading that I realized that the problem was a fundamental problem of epistemology.

Some readers may feel disappointed that I did not draw on the works of Paulo Freire, Illich, Piaget and Polanyi. These writers have been convergent with the path I have taken here in (a) their criticisms of the old paradigm, and (b) their search for an epistemology ('tacit knowledge', 'structural concepts') that does not deny ways of knowing that we clearly possess. However, it has seemed to me that only Heider and Gibson put their fingers on the assumptions that have led us for so long to deny the evidence of our own perceptions. Only they put us in a position to systematically demolish the so-called scientific foundations of those assumptions.

Without the contribution of the Heider-Gibson paradigm the educational reformers can expect to be denigrated, as once Chambers did to Illich for claiming that knowledge is naturally gained and giving as an example the prodigious feat of learning a new language ('prodigious' according to the assumptions of the old paradigm):

"It is also massively misleading to draw an analogy for learning in general from his claim that 'normal children learn their first language casually'. Learning a native language is a very different business from learning the discipline and forms of knowledge that are built up late by using that language as a tool. The learning of a native language is of a unique kind. Indeed Chomsky suggests that the only way of explaining the ease with which children acquire their native language in all its depth and variety is on the postulating of innate structures of mind that '...permit the constitution of rich systems of knowledge and experience on the basis of scattered evidence'. That something like innate structures needs postulating is backed up by such facts as that...the number of sentences in one's native language that one will immediately understand...is astronomical; and that the number of patterns underlying our normal use of language and corresponding to meaningful and easily comprehensible sentences in our language is orders of magnitude greater than the number of seconds in a lifetime. Out there are no such innate structures that can help with the acquisition of disciplines and forms of knowledge. These have been built to the stage we now have them only through minute and painful intellectual increments by the great minds of the human race over thousands of years."

In what follows we will examine the assumption that 'there are no such innate structures': in doing so it is as well to bear in mind that Chomsky's point has only very recently gained acceptance.

It seems quite probable that Chomsky has not got things quite right the first time around. It is highly probable that a gift for language and gifts for most other forms of knowing about our world and our fellow beings are what the infant human being starts with: the evidence which we will review forces us to that conclusion.

"May God us keep from single vision and Newton's sleep!" Wm Blake 1802.

Educational practice over the past hundred years and more of mass education has shown a remarkable degree of continuity.

This continuity of practice has flowed over from mass primary school education to mass secondary and tertiary education, to adult education, industrial training and to management education.

The tremendous growth, in the last sixty years of psychology, sociology, linguistics and anthropology appear to have re-enforced rather than shaken traditional educational practices. The erosion of educational practices that is commonly attributed to the influence of the modern social sciences seems to be much more an incidental effect of affluence and a tolerance of wastefulness.

The other aspect of this continuity is the remarkable ability of educational institutions to shrug off repeated demonstrations of better educational practices and to live with damning indictments of their inefficiencies.

When better methods are demonstrated they are ignored or, if debate is unavoidable, they are discredited by any available means, in line with the folk saying about 'any stick to beat a dog'.

When evidence is produced which questions the established practices it receives similar treatment.

When ineffectiveness takes on public and scandalous proportions the standard defence is that there is nothing wrong with the practices that could not be cured by better text books, better trained teachers, more highly rewarded and hence more highly motivated teachers, better classrooms, better teaching aids.

This situation has all the earmarks of an established paradigm.

In this kind of situation we have learned that the established paradigm is, for all practical purposes, unchallengeable at the level of practical evidence. Until the paradigm is **directly** challenged by a new paradigm it will continue to rule. People are simply not prepared to jump from the frying pan to the fire. (Even when a challenging paradigm emerges, people are more prone to prefer the devil they know. Only those who are marginal to the established institutional arrangements are likely to see the furthestmost fields as greenest.)

As current public pressures mount for a return to the fundamental 'Three R's' we have to ask **why the modern challenges to the traditional paradigm have proven so ineffective**; amongst teachers as well as amongst parents and employers.

If we look to the paradigmatic struggles that have taken place in other fields of human endeavour; eg, science and industrial organisation, we find that there is no real battle until there is a challenge to the critical ground occupied by the traditional paradigm (what I referred to above as a **direct** challenge).

How can we directly challenge traditional educational practice, or even know whether grounds exist for such a challenge, unless we can identify what is at the core of that paradigm? What is the critical ground that it occupies?

Most previous challenges, and here I think of Montessori, Dewey, Neill, and Lewin, have failed to constitute a direct challenge because they have failed to see that the core of the educational paradigm lies outside of educational practices. That core does not lie in the character of the teacher-pupil relation; it does not lie in open classrooms, teacher teams, group project work and not even in the balance of rewards and punishments. Traditional educational practice can and has accommodated all of these innovations, particularly in times of affluence when efficiency in educational practice mattered little, or when the educational goals are over ridden for other purposes; eg, child minding or instilling the sense of being one of a privileged elite. These things have been accommodated when and where they have been necessary and then expelled from the system when 'real' education has been re-established as the goal.

The core of the traditional educational paradigm lies in epistemology, not in educational practice. That is, it lies in assumptions about how it is possible for people to gain knowledge. Once the possibilities are defined the practice is prescribed.

Throughout the two hundred years of industrial civilisation educational practice has been cocooned within the empiricist epistemology that was sorted out by Locke, Berkeley and Hume. These gentlemen sorted out, in the most rigorous fashion, what it was

possible for human beings to perceive in the world as it was defined by Newton. Herbart spelt out in detail what this implied for educational practice. Helmholtz and Muller reaffirmed the world of Newton in their studies of the physics of optics and Thorndike, after Einstein and Dewey, re-established the Newtonian world as that in which people transact their daily lives.

Science has been cocooned within the same empiricist epistemology and each advance of science has acted to render the paradigm more impregnable. So much so that in 1980 we can find curriculum design referred to as an applied science (Pratt, 1980).

The core of the traditional educational paradigm is to be found in the basic assumptions of the Lockean tradition of empiricism, namely:

- . the individual mind is a **tabula rasa**, a clean slate, at birth;
- . the perceptual world of the new-born is a 'buzzing, booming confusion';
- . percepts arise from the association of stimuli;
- . concepts of an object or belongingness or of causal relation are inferred from associations of stimuli.

These assumptions were not casually arrived at. Locke, Hume and Berkeley argued very soundly that if the world was as depicted by Newton then the transfer of information from an object to a viewer had to obey the Euclidean geometry. Within that geometry, the light reflected from an object to the retina of the eye could yield only a chaotic two-dimensional representation of reality. Any perception, and hence any useful knowledge of a three dimensional world (such as stops one falling off cliffs) would have to come from some sort of intellectual inference. This inference from the chaotic, disordered stream of energy impinging on the sensory organs could only find a firm base in the associations that happened to occur, in time and space between different sensory feelings, including internally generated feelings of hunger, pain, euphoria, etc.

Thus, any perception of **similarity** would have to come from common associations; eg, the redness and sweetness of both Jonathon apples and pomegranates.

Any perception of **object constancy** would have to arise from contiguity in time of similar, associated sensations.

Any perception of **causality** is impossible because in a Newtonian world an actual causal relation between A and B could not generate stimuli that were any different from those created by the chance concomitance of A and B. The laws of physical optics in a Euclidean space simply do not allow it.

Perception of **depth** could only arise from inference and calculation.

In a Newtonian world, based on Euclidean space, there was no way that the stimuli impinging on any living organism could yield **direct** and immediate **information** about a three dimensional world of solid, persistent objects and serially related events (transformations such as those we refer to as causal relations and musical melodies).

Locke, Berkeley and Hume proved that scientifically speaking, we could have no sure knowledge of such a world outside of us, at least, not as individuals. At the same time, Newton had released a great upsurge in the growth of scientific and technological knowledge which we firmly believed to be knowledge of a solid corpuscular world, 'out there'.

The question was, "How did we acquire that information and how was it possible to accumulate and distribute (communicate) such information?"

With only the evidence provided by the chaotic array of energies impinging on our sensory organs we would be like the people in Plato's cave with no more knowledge of what was taking place 'out there' other than what we could infer from the flickering shadows on the walls.

Kant brought even more rigour to the questioning of how we gain knowledge. In Critique of Pure Reason (1781) he did not question the existence of the world and he did not dispute the fact that knowledge was being achieved. He questioned the assumptions of the British empiricists. Locke and Berkeley had proven that in a Euclidean world our senses could yield no direct knowledge of either things or events, they could only be inferred from **contiguity** of sensations. Hume had proven that we could not directly perceive causal relations if the stimulating energy flows obeyed the laws of Euclidean space, but allowed that the impression or idea of causality could be gained from the close **succession** of sensations. Kant, pushing the same logic even further, proved that in a Euclidean world we could have no perception of either **contiguity** or **succession** unless our nervous systems were designed so as to apply the Euclidean assumptions to the incoming sensations: the sensations themselves could provide no such ordering in time and space. This created no special difficulty for the empiricists as it was then inconceivable that the world was ordered in any way other than that described by Euclid; it was easy to assume that the human nervous system was so designed as to be an integral part of Newton's world of Mechanics, Statics and Optics.

Herbart took over Kant's chair at Konigsberg and proceeded to lay the systematic basis of pedagogy for modern society.

Herbart explained how we can gain knowledge from noting what stimuli tend to occur together; ie, associate in our intuited time and space. Herbart's Laws of Contiguity seem rather presumptuous in the light of today's knowledge but they were seen in the nineteenth century to provide a foundation for a science of pedagogy - a basis for the rational inculcation of knowledge in systems for mass primary school education. This foundation was preserved through the contributions of Pavlov, Thorndike, Hull and Skinner. These contributions from experimental science preserved the Lockean-Herbartian paradigm by allowing that a special role might be given to the contiguity of stimuli, response and internal stimuli indicating good or bad feelings (reinforcements). These extensions enabled the paradigm to be preserved in the face of Darwinian challenges as to how such incompetent perceptual systems could have had survival value.

Throughout all these historical variations in the support base of the traditional paradigm there persists a common definition of what is sound knowledge. Sound knowledge, truth, is approached by eliminating what is idiosyncratic. The oneoff perception by an individual of an association of stimuli is the treacherous, unstable material from which knowledge must be processed (like gold from an orebody). Knowledge is approached only as the vagaries of individual perception are replaced by repeated observations under experimental conditions or the effects of the individual nullified by a random sampling of observers. Replicability by others is the final test of whether these procedures had added to the accumulating body of truths. Each observed association that survives this testing program is another accretion, another brick added to the knowledge structure. There is not, of course, one structure. Each observed association must be checked against the observed associations most similar to itself. As these delete or subsume each other they define a special knowledge structure - a discipline.

This process of accumulation of knowledge in an Euclidean world has special characteristics. It has the characteristics of **analytical abstraction and logical inference**. The knowledge gained by association of stimuli is useless if we cannot generalize to something other than the properties of the immediate, transient, experienced stimuli. From our experience of similarity (supposedly the gross similarity of identical stimulations) we **infer** the existence of classes of objects and from our knowledge of the associations of classes of objects we **infer** that there are relations such as those of cause and effect. We progress from constructing a picture of the world which tells us it is 'as if' to one in which we can, with varying degrees of success, assert that 'if...then...'.

In this world the key role in the accumulation of tried and true associations necessarily goes to those who understand the intellectual

processes of abstraction and logical inference. It is they who, by association, discover that some forms of abstraction (classification) are more productive of good feelings than are others; that some modes of deriving logical implications are more rewarding than others. The same people find that they are better able to specify what kinds of association are most likely to be sought for, under what conditions (eg, design of experiments or surveys). They are better able to do this because they are familiar with the contradictions that emerge at the higher levels of abstraction. They have the further responsibilities of ensuring that garbage does not enter the system and that knowledge does not flow out of the system unless there is clear understanding of the degrees of uncertainty associated with the layers of knowledge that underpin it. Attempts to polarize knowledge are regarded with suspicion.

The task of education is primarily that of distribution of the accumulated knowledge. Given the tiered structure of abstractions that characterises each special branch of knowledge the educators must take care that no layer of knowledge is distributed until the underlying knowledge has been distributed and absorbed.

Three general requirements must be met if this distribution is to lead to a successful transfer of knowledge.

First, the educational system must insist that the 'fitful, random individual experiences of association' are totally inadequate as a source of knowledge. Such experience is first and foremost the source of error and the educator must brook no competition between the claims of individual experience and the proven status of accumulated knowledge. The path to knowledge is the memorization of established associations and the knowledge of the rules of classification and the logic of implication. Educational progress is then measured by tests of memory and of one's ability to apply the rules of classification and logical inference. The classical measures of 'Intelligence Quotient' are primarily measures of the latter abilities (Olson, 1975).

Everyone coming into an educational system possesses some of the sensory organs and hence all must be taught to distrust their personal experience as a guide to knowledge. Only a few have the high IQs that go with the ability to make higher order abstractions and determine logical implications. Only these can carry the burden of building on, maintaining and controlling access to the knowledge structures. The rest, having found that they cannot learn to be scholars or scientists are returned, enriched solely by whatever established associations they have memorised.

It is not enough to just, as it were, poke the eyes out of the would-be learner. The educational process also required **disciplined** students (just as the industrial revolution created the need for a disciplined

work force). At the heart of the disciplinary process is the need to create in the mind of students a measure of independence between their judgements of 'where' and 'when' education is best pursued. The natural tendency of any human being, or for that matter any living system, is to act as if there is 'a time and place for everything' (the evidence for biological cycles is quite overwhelming). Within machine-based industry the clock is set to fit the requirements of the machine regardless, more or less, of the biological clocks of the workers. Similarly with learning settings. The process of distributing knowledge is 'time independent'. This peculiar circumlocution simply states that the time for teaching is independent of any question of whether it is the 'right time and place' for the student. The right time for teaching B is when A has been learnt. C can be taught only when B has been learnt. The disciplined student accepts that the appropriate time for studying is that laid down by the curriculum, which in turn is presumed to be dictated by the nature of the socially accumulated body of knowledge. From the earliest times, according to Marrou (1956), the pedagogue was the layer-on-of-the-cane who forcibly adjusted the student's clock to the tempo of the learning process; the controlled delivery of stimulations to ensure the student's learning was originally thought a more menial task that could be left to others.

The third pre-requisite for learning within the traditional educational paradigm is **literacy**. Only when one has mastered the competencies required to record in writing and to read writing can one master the processes of abstraction and logical inference:

"...The form of human competence involved in drawing logical implications from statements of unknown trust-value or plausibility is a form of competence tied largely to literacy. It may be argued that for logical analysis to occur the statements themselves must become the reality."
(Olson, 1975, p.370).

The central role of literacy in the advancement of knowledge, in this paradigm, does not derive only from the need to pin down what we think we have perceived, it is also to pin down what is reported:

"...while speech is an ephemeral and transparent code that maps onto a picture of reality that we called commonsense knowledge, writing changes speech into a permanent visible artifact, a reality in its own right."
(Olson, 1975, p.370)

Within this paradigm **numeracy** is but a special branch of literacy. It took more than a century of failed teaching before the need for a 'New Maths' was accepted.

These three pre-requisites pretty well define the aim of this educational paradigm - to produce the **critical, disciplined and literate** mind.

The significant variable beyond the control of education was seen to be that of **intelligence**. People appeared to be innately different in their abilities to abstract and infer from propositional statements in a textual form. As these abilities were essential to all of the specialized bodies of knowledge, it came to be common place to assess the IQ of a person as a basis for deciding whether it was worthwhile trying to educate a person beyond a certain level (eg, the eleven-plus exams in the UK).

The emergence of a new paradigm of learning

The basis of the traditional paradigm was at risk from when Einstein displaced Newton's Euclidean world with that of Reimann and Lobachevski. However, Newton's Optiks lived on, thanks to Helmholtz's prodigious studies, as that branch of physics and psychophysics that studies the properties of light *per se* and its detection by the human organism. The limits to this context were not apparent and little impact was made when Alfred N Whitehead, in 1926, pointed out that Bishop Berkeley's problems with the apparent constancy of perceived shapes disappeared if one allowed that perceptual organs were geared to Reimann's timespace and not to Euclid's. In the world of middle-sized objects and moderate speeds that humans lived in these considerations seemed esoteric.

The fundamental challenge to Lockean epistemology, and hence to the traditional paradigm of learning, came when Fritz Heider in the same year as Whitehead, stated that:

"the question has never been raised whether something that serves mainly as a mediator (eg, air for light) has not from a purely physical point of view, characteristics which are different from those of an object of perception."

(Heider, 1959, p.1)

Heider was correct. From Newton through Helmholtz to even the present day; eg, R K Luneberg's Mathematical Theory of Optics, 1975, this seemed an irrelevant question. The properties of light had to exist in its particulate or wave-forms and the perception of light had to be based on the properties of the rods and cones that formed the retina of the eye. This was all we needed to know in order to determine whether something was 'perceivable'. Content was irrelevant to the perceptual stage. Following the Lockean school it seemed

obvious that content, the meaning of the perceptions, could only emerge at the stage of cogitation.

The observations made by Heider sustained the relevance of his question. First he noted that in the perception of objects we are dealing with ambient, reflected light, not the radiant light that is so central to the studies of optical physics. Reflected light, except for mirrored light, has the property that:

"the order of the direction of light rays is changed at the surface of an object. All rays, whatever directions they come from, are absorbed to produce the one vibration which conforms to the surface of the object at each point. The rays are not reflected independently of each other as far as direction is concerned. With an object which has not the properties of a mirror, however, the kind and direction of incoming light rays are more or less irrelevant, if only enough energy reaches each point to set its free vibrations in motion... the waves at the single points of a solid body are independent of each other, nevertheless in a certain sense they form a unit, because the many points themselves are part of a unitary object... If an illuminated body moves, all the vibrations on it move in a certain order...the light rays are coupled because they are reflected by coupled points. These light waves always appear together, although changed as a result of their illumination, position, etc. **They contain an order** which becomes meaningful only if one refers them to the corresponding object."

(Heider, 1926, 1959, pp.16-17)

The order in the reflected light rays is still there as we change our viewpoint, turn our head, move around or touch the object. This is the truly critical point that Heider made. In the sea of changing sensations we see the unchanging, invariant order that is imposed by the object on the light rays that reach the eyes. It is misleading, however, to suggest that we have to refer them to an object for them to be meaningful. The object or event is the order we are directly given in our perception, no more and no less. Nothing corresponding to this transmission of information about order is the subject of physical optics or physiological studies of the eye. With the recognition of this transmission the so called paradoxes of size constancy, colour constancy, depth perception, etc simply vanish. Kant, it turns out, was solving a problem we had caused for ourselves by an inadequate theory of perception.

The critical step that Heider took in this paper was to "explain some of the characteristics of the 'sensations' on the basis of the characteristics of the correlates among physical events" (p.34). With this step he laid the basis for 'ecological optics'. With his next paper, 'The Function of the Perceptual System' (1930), Heider completed the foundation of the

alternative scenario of how we learn to know. He established that the environment had an informational structure at the level of objects and their causal interactions, and that the human perceptual systems were evolved to detect and extract that information.

Nothing was done by physicists to build on these foundations, they were into lens systems and the micro-world of electrons and photons, not the everyday world of ecological optics. Psychologists were uninformed or unimpressed. Heider's circle in Berlin was broken up in 1933-4 and his papers not translated into English until 1959. More seriously, Egon Brunswik launched a serious and very public program of research along these lines in the 1930s. His program got nowhere. Assuming that the coupled information at the source of reflected light was being transmitted to a perceptual apparatus designed for a Euclidean world he could not see how any other than doubtful probabilistic information could be received - as Bishop Berkeley could have told him.

The program of research indicated by Heider's work could not come to fruition until the assumption of Euclidean space was dropped, at least in the consideration of visual perception. This was done by James J Gibson. In 1938 he published A Theoretical Field-Analysis of Automobile-Driving which presupposed a projective geometry freed of Euclid's Fifth Postulate, that parallel lines never meet. He showed that the critical information required by a car driver was present in the flow of light rays reflected from the environment to any point at which there was a potential driver of a moving vehicle. Given the properties of reflected light and the nature of reflecting surfaces, that information would still be there even if no one had invented fast moving surface vehicles, or no one in a car had ever driven on that course. A tumbleweed blown along that same course would not have picked up the information as such a pick-up presupposes perceptual organs evolved to do so. Through the forties and fifties Gibson was deeply involved with such perceptual problems as controlling high speed landings on aircraft carriers. This provided a critical practical test for his theory of perception in a non-Euclidean world. Within the Lockean framework perception of depth required calculation and inferences from cues given by binocular vision. Within Gibson's perspective geometry depth was directly given in the flow patterns of the visual field - one eye was all that was needed to pick up the flow patterns. The test, in whose design and execution Gibson had no part, was simple. Pilots barrelling down to a pitching flight deck at 140 odd knots had vision of one eye blacked out. This did not increase the accident rate.

Twenty years after the first paper, Gibson published Visually Controlled Locomotion and Visual Orientation in Animals (1958). With this publication it could no longer be doubted that the Lockean paradigm had to go.

Heider had established that the Lockean paradigm was incompatible with the notion of the perceptual systems having survival value. Walls (1942), had shown the remarkable relation between the various eye structures that had been evolved and the ecological demands upon the species having those different structures. Gibson determined the non-Euclidean geometries which allowed for the direct transfer of light-borne information from the environment to eyes such as those possessed by human beings and other living beings. As of 1958 he had only proven the case for visual orientation and visually controlled locomotion. However, for organisms that can only survive and reproduce by moving toward 'goodies' and away from 'baddies' that was no trivial achievement. If the concept of Euclidean space had to be dropped in order to make that achievement what grounds existed for hanging on to the Lockean paradigm? On the face of things there were no such grounds. In all the other areas of perception - taste, smell, touch, auditory etc - the assumptions of the Lockean paradigm had created problems as insoluble as those of depth and the constancies in visual perception (Gibson, 1966).

The striking features of this Heider/Gibson paradigm are:

- . the environment is recognized as having an informational structure;
- . this informational structure of the environment is embodied in the invariances that exist in the relations between energy flows despite fluctuations in the individual flows and regardless of whether they impinge on the sensors of an organism;
- . the perceptual systems of living species have evolved so as to detect and extract this information from their environments despite a great deal of 'noise' at the sensory level;
- . our conscious feeling of sensations is all but irrelevant to the role of the senses as discriminating perceptual systems (Johansson, 1975).

This new paradigm allows us to think in strict and non-mentalistic terms about perception, not just sensations. It is also a paradigm that forces us to think in non-mentalistic terms about 'things' and 'media'. Such considerations were extraneous to the old paradigm of perception but now they are to be seen as intrinsic to the questions of what we perceive and how we perceive, and hence intrinsic to questions of human communication.

This paradigm rejects the two assumptions that underline the traditional paradigm:

- . Locke's assumption of the *tabula rasa*, the blank tablet of the mind at birth (1690);

Johannes Muller's doctrine of the **specific qualities of nerves** (1826), implying the "booming, buzzing confusion" of the infant's perceptual world.

The puzzles about how we build up the associations enabling us to 'unconsciously infer' three-dimensionality and perceptual constancies (Helmholtz, 1865) go by the board.

"Sensations are not, as we have always taken for granted, the basis of perception.

When the senses are considered as perceptual systems ('systems of detection', p.1), all theories of perception become at one stroke unnecessary. It is no longer a question of how the mind operates on the deliverances of sense, or how past experience can organise the data, or even how the brain can process the inputs of the nerves, but simply how the information is picked up. This stimulus information is available in the everyday environment, as I have shown. The individual does not have to construct an awareness of the world from bare intensities and frequencies of energy; he has to detect the world from invariant properties in the flux of energy. Such invariants, the direction of gravity for instance, are registered even by primitive animals who do not have elaborate perceptual organs.

Mathematical complexities of stimulus energy seem to be the simplicities of stimulus information. Active perceptual systems, as contrasted with passive receptors, have so developed during evolution that they can resonate to this information."

(Gibson, p.319)

Johansson and the Uppsala school have confirmed Gibson's finding that the physical correlates of the perception of visual motion are the invariants in environmental stimulus flows that are described by projective geometry and vector analysis of the components of those flows. They have established, alas, that there is no conscious choice involved, "...the observer is evidently not free to choose between a Euclidean interpretation of the changing geometry of the figure in the display and a projective interpretation" (p.86). In computer language, the visual system is obviously 'hard wired' to extract this kind of higher-order information from the stimulus flux before it reaches consciousness.

In the field of colour vision Edwin Land and his colleagues have been able to demonstrate that "... the stimulus for the colour of a point in an area is not the radiation from that point". (Land, 1977, p.115)

They have gone beyond this to establish that:

"Whereas the initial signal produced in the outer segment of the receptor cell is apparently proportional to the light flux absorbed by the visual pigment, the final comprehensive response of the visual system is 'lightness' which shows little or no relation to the light flux absorbed by the visual pigment." (p.110)

The information people extract to establish the biological response of "lightness" turns out to be a complex mathematical function of absorption **and** reflectance properties of the surface, **and** the properties of the illuminates; and not of their absolute values but of their ratios as established for each of three levels of wave-length reception,

"After the three lightnesses of an area have been determined by the three retinex systems (something between retina and cortex) no further information is necessary to characterise the colour of any object in the field of view...for each trio of lightnesses there is a specific and unique colour."

(*ibid*, p.115)

It goes against the grain to grant such complex analytical capabilities to the perceptual systems. Why, however, should we readily accept this order of capabilities in organs like the liver and the kidneys and expect evolutionary adaption would be successful with any less capability in the perceptual systems?

The other side of this biological picture of the perceptual systems must be noted. Much of the information present in the environment of the evolving species must have been irrelevant to survival and "...accordingly the perceptual machinery provides no means for their extraction" (Julesz, 1975, p.3). Julesz has discovered such a limitation in the extraction of information from the 'ground' in figure-ground perception. Those things that take on figural properties can be distinguished at very high orders of complexity but 'grounds' take on the properties of textures and:

"Whereas textures that differ in their first- and second-order statistics can be discriminated from each other, those that differ in their third- or higher-order statistics usually cannot." (*ibid*, p.35)

He has established that this is not a learnt effect. It appears to be a limitation we share with other forms of animal life (as witnessed by their evolved forms of camouflage). In dyslexia and in the figure-

ground reversal of high speed motor racing we appear to approach our perceptual limits.

The implications of the Gibson/Heider paradigm go beyond our perception of the physical environment.

Asch has made similar advances in analysing the informational properties of face-to-face social environments (Emery & Emery, 1976, pp.20-26). Heider and the socio-linguists have made real beginnings in the analysis of the invariances that carry the informational properties of conversational fields.

This latter has probably been one of the most striking challenges to our everyday conceptions and bids fair to revolutionise our ideas about speech as a medium compared with text.

In keeping with the traditional paradigm we have tended to assume that in listening to speech the sounds we hear are assimilated to learnt vocabularies and grammars and that we make use of other clues to infer what the other is meaning. For a long time psychiatrists, particularly those working in small group settings, have had their doubts about this. They have become convinced that sometimes they can hear another level of communication, what they call the 'music' of the conversation, and that it is out there to be listened to and not at all like the process of making conscious inferences from a few clues. Studies such as that by Labov and Fanshel (1977) leave us in no doubts about that. They show that perceivable invariances in conversational fields directly yield us information about invariances in the dynamics of interpersonal interaction (see also Heider, 1958). They find this so compelling that they insist that speech must be seen as an action that directly changes the environment of the other (Emery, 1980).

These findings have been generalized to cover music as well as speech by Jones (1976) using the mathematics of invariances found in group theory. In this, and in Gibson's most recent work (1979), we find that our perceptual systems appear to have evolved to cope with a world that is remarkably similar to the world to which modern physics subscribes: a world which is a nested hierarchy of spacetime events structured by invariant relationships of relations. The world in which we perceive is, like the world perceived by modern physicists, inhomogeneous, an-isotropic and discontinuous. So long as we thought that the problems of epistemology were the problems of how we perceived objects in a homogeneous, isotropic and continuous Euclidean space, existing as an absolute, independent of objects, and of how we perceived change in a time that was independent of space and objects, then, for just so long, we were bound to be defeated in our task.

The convergence with modern physics extends to the very concept of 'object':

"For now, we regard the object as an abstraction of a pivot or invariant structure, but not as a basic element, which exists separately, and serves as the source of casual action on other objects, and which is in turn the recipient of casual actions by these other objects. Thus, it would be wrong to think of the centre of a vortex as a separately existing entity, capable of exerting 'forces' on other centres. And more generally, such centres, pivots or invariant structures do not do anything at all; they just are *invariant*. In other words, it is the movement that possesses a certain invariant, and not the invariant that creates the corresponding movement.

Our customary mode of using language tends to confuse us on this problem, for it is based on the conception of what is as a set of **objects**, as symbolized by our **words**."
(Bohm, 1963, p.49)

As a theoretical physicist who has made significant contributions to the history of science David Bohm has explicitly considered the import of the Gibson paradigm (1965). In this light he sees science as an extension of our perceptual activity of extracting information from the invariant features of our environment and not primarily as an activity to accumulate a body of verified knowledge. The latter is in his terms only an adjunct to the process of extended perception (p.228).

Extraction vs Abstraction

In discovering how we perceive, Heider, Gibson *et al*s did not only lead us to a new ontology. If that is all they did, it would not challenge the traditional paradigm of education. We could, as we did with the New Maths, teach it as a subject in the old paradigm.

It is the new epistemology that emerges with Heider/Gibson that constitutes the challenge to the traditional education paradigm. I will later discuss ways in which this challenge has emerged in educational practices but first it seems desirable to consider the challenge at the most general level. This is the level at which we conceive of moving from perceiving to knowing, any kind of knowing, and of moving from 'percept' to 'concept'.

The traditional paradigm took over from Aristotle and the medieval Schoolmen the assumption that this transition is achieved by a process of abstraction. The process of abstraction provides the bridges, in the traditional paradigm, from sensation to the higher levels of thought about the nature of inferred reality. It is essential in the process of getting from the flux of sensations to the concept of thing; it is

equally essential in getting beyond this to **generic** concepts of classes of things and classes of classes. The advancement of knowledge is seen quite literally as a **ladder of abstraction**, as these bridges all lead away from the impossibly rich flux of sensations to levels of conceptualization that are increasingly more general in their reference to larger and larger classes of things and decreasingly specific about the qualities of the things to which they refer; ie, more abstract - less concrete.

This is the process, that is identified with Aristotle, of **abstracting the universal from the particular**.

This is a process that depends upon association of sensed similarities, some storage of these experiences in memory traces and some interaction between these traces and subsequent experiences of the particular association. The traces and the new experiences have, of course, to find each other for a strengthening of the memoried association and presumably this is because the traces retain an image of similarity.

So long as we start from the basic assumption that information about the outside world is conveyed by radiant light in a Euclidean world then this is indeed the only way we could have built up our scientific and other bodies of knowledge. Even the Gestaltists who firmly asserted that we had a knowledge of a structured world 'out there' were stuck with the problems of similarity and memory traces. The best they could do was to suggest that the 'brain fields' that transformed the sensory inputs were like electrical fields with non-Euclidean properties (Brown and Orbison, 1939).

Adopting a new language, the language of computers, has not freed thinkers from this traditional paradigm (Weimar, 1977, pp.269-70).

As we have come to expect in paradigmatic conflicts this persistence has occurred in the face of quite startling contradictory evidence. In a long series of experiments Erich Goldmeier showed that our primitive assumption that 'we knew similarity when we saw it' was certainly true but it conformed in no way to what the traditional theory of abstraction required - similarity of retinal images. The dimensions within which he was able to demonstrate perception of similarity were such that "In general it is not possible to rotate the space and refer it to rotated axes, as can be done without restriction in Euclidean spaces... Besides not being Euclidean, similarity space is unusual in another way: it is far from continuous." (1972, p.125)

It was also assumed that for the brain to perform the abstraction process, incoming information had to go from the projection areas of the brain to the so-called 'association' areas where they would link up with similar memory traces. However, destruction of the tissues

connecting these areas does not prevent concept formation (Pribram, 1971).

Within this paradigm one would also expect that the more stable one could hold the retinal image (by eye movements, turning the head etc) the stronger would be the impression that one gained. Imagine the surprise when, after techniques to experimentally ensure stability of the retinal image had evolved, it was found that a stabilized retinal image rapidly breaks up and is lost to sight (Pritchard). Carefully controlled experiments with the development of vision in kittens led Pribram to a strong conclusion: "the tuning of the cortical cells to the environmental situation which remained invariant across transformations of head and eye turning was behaviourally effective; the tuning of the cortical cells to consistent retinal stimulation had no behavioural consequences" (1977, p.93).

The deep-seatedness of this part of the traditional education paradigm cannot be over-stressed and it is intimately entwined with literacy at the core of the paradigm.

In his study of our historical concepts of Substance and Function (1923) Ernst Cassirer noted that:

"In the historical beginnings of logic this fact is most evident. **Concept** and **form** (images) are synonyms, they unite without distinction in the meaning of *eidōs*. The sensuous manifold is ordered and divided by certain spatial forms, which appear in it and run through all diversity as permanent features. In these forms we possess the fixed schema by which we grasp in the flux of sensible things a system of unchanging determinations, a realm of 'eternal being'. Thus the (Euclidean) geometrical **form** becomes at once the expression and the confirmation of the logical type. The principle of the logic of the generic concept is confirmed from a new angle; and this time it is neither the popular view of the world nor the grammatical structure of language, but the structure of a fundamental mathematical science upon which it rests." (1923, pp.68-9; my inserts).

The reference to grammatical structure is emphasized in Olson's remark that "...while the Greeks thought that they were discovering eternal truths about reality, they were in fact merely reflecting on the logical structure of ordinary (written) language". (ibid, p.367; my insert),

Within the new paradigm the universal is grasped in the grasping of the particular: the universal is not achieved by a separate intellectual process of abstraction. The kinds of concepts that represent this

perceptual achievement are **serial-genetic concepts** - the concepts yielded by the perception of the serial order generated in nested spatio-temporal events. They are not the **generic** concepts yielded by a process of abstraction and naming; eg, of naming species and genus.

Ernst Cassirer, in 1923, was able to show that the advance of modern physics and chemistry was founded on the use of such serial-genetic concepts. By reference to one of Helmholtz's observations he was able to point to the perceptual activity that yields such concepts:

"From the standpoint of logic, it is of especial interest to trace the function of the concept in this gradual process of construction. Helmholtz touches on this question when he affirms, that even the presentation of a connection of contents in temporal sequence according to law would not be possible without a conceptual rule. 'We can obviously learn by experience what sensations of vision, or some other sense, an object before us would give us, if we should move our eyes or our bodies and view the object from different sides, touch it, etc. The totality of all these possible sensations comprehended in a total presentation is our presentation of the body; this we call perception when it is supported by present sensations, and memory-image when it is not. In a certain sense, although contrary to ordinary usage, such a presentation of an individual object is already a **concept**, because it comprehends the whole possible aggregate of particular sensations, that this object can arouse in us when viewed from different sides, touched or otherwise investigated.' Here Helmholtz is led back to a view of the concept that is foreign to traditional logic and that at first appears paradoxical even to him. But in truth **the concept appears here in no mere extravagant and derivative sense, but in its true and original meaning as was the 'serial concept', in distinction from the 'generic concept'**, that was decisively revealed in the foundations of the exact sciences, and that, as is now seen, has further applications, proving itself to be an instrument of objective knowledge."

(Cassirer, 1923, pp.292-3).

Helmholtz is referring here to what we perceive when we act as a percept-generating system with two eyes, a head for turning, a body for moving about and overlapping sensory modalities. Unfortunately the paradox between the yield of this perceptual system and the yield of the retina in isolation did not budge him from his dedication to Newtonian optics. Ironically, Cassirer also failed to make the jump. He was in Berlin at a time when the psychology of perception was literally in a ferment, thanks to the emergence of the gestaltists, but he

could conceive of no theory of perception that would encompass Helmholtz' insight. He settled for an objective idealism somewhat like Kant's: some sort of thinking was achieving the structural concepts, not perception. Lewin was emerging in the same heady Berlin atmosphere and was deeply influenced by Cassirer but also became locked in by the Lockean assumptions to a near soliptic 'life space'. It was left to Heider to complete the foundations of the new paradigm and exorcise the 'ghost of abstraction' that still lurked on in the work of Cassirer and Lewin.

Some of the contrasts between the two paradigms may be summed up as follows.

Traditional paradigm	New paradigm
abstraction	extraction
generic concepts	serial-genetic concepts
permanence-change	relative persistence
achieved by thinking	achieved by perceptual
and memory	activity

The implications of the challenge to the logic of abstraction are substantial.

In the first place we can consider the implications for the social ownership of knowledge. There are bodies of 'knowledge' that have been built on the logic of abstraction. Cassirer has shown how they have necessarily used structural concepts to determine what will be abstracted out. These tacit 'rules of abstraction' are the inner mysteries of the various bodies of scholars and theologians. They provide a ready operational definition of an 'outsider'. Such boundaries abound in science. However, as Bohm has pointed out, there is, in the new paradigm, no such boundary between perceptual and scientific activity:

"...fundamentally both can be regarded as limiting cases of one overall process, of a generalized kind of perception, in which no absolute knowledge is to be encountered" (1965, p.230).

In this new paradigm it is pointless to speak in absolute terms of the advances of science; it becomes necessary to speak of advances relative to the perceived knowledge of invariants available to the 'non-scientific' members of the community. With regard to bodies of knowledge that are more akin to theology it is necessary to ask whether they measure up to what is known to people through their direct perception. I suspect that little, for instance, of the psychology of personality and interpersonal relations would stand up to such a test (Heider, 1958).

The general and undeniable consequence of the new paradigm is that no firm barriers can be drawn between common sense and bodies of scientific or scholarly knowledge.

Concepts

The so called special skill of identifying the universal (the invariances) through logical abstraction and logical inference is a myth. It was of course a convenient myth for preserving social hierarchies.

This is not entirely correct. It is certainly true that we have direct perceptual access to a good deal of the order present in nature (and by the leverage of instrumentation to a very great deal of the order that our perceptual systems have not evolved to directly detect). Finding order in our symbolic representations of our observations is a very different kettle of fish: particularly when those records are contaminated by the ordering principles invoked to create our symbolic systems. The dominant symbolic systems are written languages and numbers but there are hosts of minor ones such as regimental insignia for military bodies. There are special skills in logical abstraction and inference within those symbolic systems, and they can be tested and measured. Furthermore there appear to be significant and relatively stable individual differences in ability to exercise this class of skills (eg, the studies of IQ). The point is that these skills in identifying and handling abstract similarities are:

- . not predictive of ability to identify serial-genetic invariances in non formal systems; ie, to detect order when we see it. (Formal education is of little help to the tracker or the policeman on the beat. It is possible, however, that skill in identifying serial-genetic invariances in formal systems; eg, the number series and graphical representations of chemical structures, is predictive of ability to identify such invariances in non formal systems. The reverse need not hold because of unfamiliarity with or disdain for formalized systems);
- . highly dependent on long periods of motivated engagement with formal (symbolic) systems. Otherwise known as 'schooling'.

Less abstractly, a high IQ does not indicate an ability to behave intelligently outside the narrow world of academic scholarship although higher average IQs can be expected from social groups that spend more years in academic studies and/or are more involved in handling formalized, symbolic systems. Therefore, being governed by the more schooled, higher IQ strata of society does not ensure more intelligent government. That is a point that could be made even about the government of universities.

It is important to look closely at both of these points.

Regarding the first the critical question is that of 'intelligence'. We do not know what intelligence is but we do know that behaviour is more or less intelligent insofar as it reflects "the apprehension of the relevant structure of the total behavioural field, relevance being defined in terms of the immediate and presumptive future purposes of the actor" (Chein, p.115). A vast amount of empirical study has been devoted to the development of tests of intelligence and the results of these tests have been widely used to select who shall be given further education; eg, the English 11+ exams. They have been extensively used for selection of potential officers, managers, etc. on the unproven grounds that those who were best able to benefit from schooling were also those best able to learn in non academic settings, and therefore most likely to develop into effective officers or managers.

From the very beginning IQ tests were constructed so that they predicted, as well as possible, the results that could be expected from examination of schooling. They were designed to reflect the requirements for success in schooling.

Success in schooling depends primarily on being able to learn from being lectured to. This requires:

- . an ability to sit still and attend to the narrow range of stimulation provided by, and dictated by the teacher (range of attention and degree of concentration);
- . an ability to remember what is not understood (ie, to find a frame of reference that is not provided by one's own experience);
- . a willingness to engage in the repeated rehearsals necessary to establish such an independent framework.

The ideal of such rote learning is clear and exact reproduction of the lessons that have been taught or prescribed. The ideal qualities that are sought in the student are obedience (first and foremost), diligence (constant and persistent application to the set tasks) and conscientiousness (striving to meet set standards of performance). The second qualities are truthfulness, straightforwardness and stoicism. These are secondary only in that they relate to the student's acceptance of the coercion of the teaching relation. It is helpful to that relation when the students accept that they must not seek to avoid the compulsions by lying, deceit and evasion, and it is easier to maintain those pressures if they accept their punishments 'like a man'.

Performance on IQ tests directly measure ability to master the unnatural tasks of abstracting and inferring with man-made symbol systems and indirectly measure the extent to which the student has been able to internalize, or systematically cheat, the coercive relation of teacher and student. The student-teacher relation absorbs one

aspect of the child-parent relation. It is obvious that no child would willingly opt for the coercive relation that traditional education (schooling) demands. It is equally obvious that this relation will not be effectively imposed unless the family gives its active support or the student-teacher relation is granted significant autonomy, as in boarding schools.

What is clear is that the 'educational reproduction' that we see with our formal educational systems has as little to do with the natural reproduction of intelligence as eunuchs have to do with sexual reproduction.

In the second place we can consider the implications for education in general.

We have conceived of education as a filling up of minds with information and a training, where suitable, in the logic of abstraction and inference. We are now confronted with the fact that people are equipped to directly achieve information for themselves and they achieve that in conceptual form - the same form of serial concept that stands as the highest achievement of modern science. The central problem for education is no longer which minds can achieve conceptual knowledge and undertake conceptual operations. In the new paradigm the central question is what kinds of environments best enable all minds to exercise their ability to perceive deeper orders of invariance. Educationalists will be in the business of manipulating the L21 not the L12 (Emery, 1977, p.90; McLuhan, 1977).

"When the behavioural situation is too simply structured the organism tends to behave in a stereotyped fashion and learning takes place by a blind conditioning process; when it is over-complex, the organism tends to display random behaviours and learning is by vicarious trial-and-error. Organized behavioural sequences and insightful learning presuppose a degree of structure that is optimum for the particular organism".

(Emery, 1959, p.66)

This is quite contrary to our traditional practice of minimizing environmental variations by standardising schools, classrooms, teacher training, text-books, curricula and grade-work.

Confronting the challenge

In theory, that is, in the theory of the Lockean paradigm of knowledge and education, the Heider/Gibson contribution should have led to the ransacking of the established stores of knowledge and a massive re-thinking. In theory, the program for accumulating knowledge and

distributing it is controlled by impersonal criteria of **validity** and **consistency**. The criterion of validity has an important modifier, **generality**; it is not expected that a new truth will necessarily displace an accepted truth at a higher order of generality. This new paradigm was proven more valid in critical areas of perception: it had consistency where the old paradigm was riddled with long-standing and apparently insoluble paradoxes and, more significant, it challenged at the highest order of abstraction of the old paradigm, its geometrical model of the world.

History, not theory, is a better guide in these matters. The challenge is so profound that we have to accept that we are confronted with a clash of paradigms.

As an historian of science Thomas Kuhn documented the lengthy strife that has accompanied past conflicts of paradigms. He was not optimistic enough to think that this process of radical change could be accomplished more easily once we were aware of what we do to each other. He was not, on the other hand as pessimistic as Max Born, a celebrated leader of the new paradigm of quantum physics, who suggested that the fight was over only when the believers in the old paradigm were buried, literally.

In this case we are dealing with a paradigm that has effectively structured the allocation of statuses and resources throughout the lifetime of industrial society, in education, science and the arts. There is more to the reallocation of statuses and the shifting of institutionalized priorities than the validity, consistency and generality of scientific findings. Persons and institutions will seek to defy any down-grading of their standing; as the eminent representatives of an order of knowledge that has long served the society they will always be well placed to powerfully oppose change. Against this there are forces in a rapidly changing society toward gaining a better understanding of what it is doing.

We have noted how the development of airborne weapon systems gave a powerful impetus to Gibson's line of thought. Untoward developments in the telecommunications industry gave rise to convergent challenges to the Lockean paradigm that had guided the telecommunications engineers (Emery & Emery, 1976, 1980).

The critical confrontation of the paradigms that we see today is not a direct result of the scientific work of Heider and Gibson nor a flow-on from military research. The confrontation arises from the mass utilization of electronic means of communication; eg, television and visual display units. Within the Lockean paradigm these should constitute remarkable advances on the information communicating capabilities of speech and text: they do not. Theoretically, again in

the Lockean paradigm, they should have transformed education; they have not.

Clearly something was wrong.

Something is wrong. The Lockean paradigm has been proven to be a thoroughly misleading model of how we gain knowledge. In the field of education Herbart, Thorndike, Hull and Skinner built on the assumptions of that paradigm. Our programs of mass education are premised on the assumptions of the Lockean paradigm. Dewey, Montessori, Neill and Lewin were not able to challenge the epistemological assumptions of the Lockean model, the Euclidean geometry assumed by Newton, and hence their efforts were as futile as Blake's poetic fulminations against 'Newton's single vision'.

We are now faced with the stupendous task of redesigning a system of mass education that is powerfully supported by entrenched social interests. The task of redesign is not idealistic. As pointed out above the existing educational systems are fatally flawed. They blind, not educate their students. In a bureaucratized society this may be a stabilizing factor. To quote from de Bono, "A headmaster once told me that it was *unfair* to teach people how to think. He said that most of the pupils from his school were going to spend their lives at factory benches and that thinking would only make them dissatisfied." (1978 p.20)

In a society trying to cope with turbulence, the pressures toward participative forms of work, planning and governance are building up a ground swell of resentment against an educational paradigm that does little to develop the confidence or competence of most people. The emergence of the new paradigm shows that this is not inevitable and it points to the directions in which changes can be made.

Some Educational Implications

Some of the educational implications of the new paradigm can be spelt out.

First, since limitless information is present in our environment then any person with some intact perceptual systems can access as much or as little as he or she needs for as long as they live. Access is restricted only by habits of and lack of confidence in perception. The pretence that knowledge can be accessed only through years of schooling in certified educational institutions is a sham. The claims that the real knowledge is locked up in the storehouses of knowledge that are so jealously guarded by a priesthood of scholars and scientists is also a sham. There is some kind of knowledge in those storehouses and there are extensive social and economic limits on what can be accessed but

these are not the fundamental limits on knowing implied by the traditional paradigm; limits that denied to most people the knowledge that they could gain valid knowledge without being schooled in it.

Second, education is first and foremost the education of our perceptual systems to better search out the invariant characteristics and distinguishing features of our personal, social and physical environments. It is an education in **searching** with our own perceptual systems not an education in how to someday **research** in the accumulated pile of so-called social knowledge. An education in searching is an education in generative thinking (these are de Bono's terms. Elsewhere I have characterised it as 'open systems thinking' (Emery, 1967). An education for research is a schooling in bodies of organized knowledge, in the workings of formal logic and in fluency of textual expression. Whilst Edward de Bono appears to be unaware of the revolution wrought by Heider and Gibson he very clearly locates generative thinking in their paradigm. Drawing on his remarkably extensive experience he has shown that generative thinking about our environment and our place in it is a matter of perception, of seeing things more clearly and of seeing things in context, not a matter of puzzling over images and abstract ideas in our mind:

"Perception is the processing of information for use. Thinking is the processing of information for use. We have defined thinking as the 'exploring of experience for a purpose'. That is why perception and thinking are the same thing" (ibid, p.82).

"Thinking arranges and re-arranges perception and experience so that we may have a clearer view of things" (p.41).

The teaching of thinking is **not** the teaching of logic but the teaching of perception... I wish to make this point very strongly... In its proper place logic is a tool of perception" (p.77).

In the traditional paradigm it seemed obvious that "thinking itself was not possible without a repertoire of language-based concepts; that language was the very stuff of thinking and not just the means of expression" (p.36). It was easy in this context to "...regard thinking as semantic manipulation and all errors in thinking as semantic mismanagement" (p.37).

This has not been without its consequences, "...it is a very bad mistake - for which our academic institutions are solely responsible - to equate semantic tidiness with thinking skill... It could be said that the main obstacle to our development of a more effective thinking system has been our obsession with semantic thinking" (pp.40-1).

In the new paradigm "Thinking does not have to take place in words. Nor are concepts limited by the availability of words to describe them. Thinking can take place in images and feelings which are quite definite but too amorphous to be expressed in words" (p.36). "The very first step in teaching thinking must be to provide a bypass to (this) instant judgment by requiring the thinker to direct attention to all the relevant and interesting points in the situation" (p.42).

De Bono has demonstrated that thinking is a skill which can be learnt by anyone prepared to learn, that is, anyone not too conceited about their innate cleverness. He has shown that it is a skill which improves the performance of young or old, bright or dull, literate or illiterate.

It could appear from the above that I am saying that if we recognize the human potentials for perception revealed in the new paradigm, and proceed to teach thinking along the lines developed by de Bono, then we will raise the intelligence of people. In the context of the long standing debate about IQs and genetic inheritance this would certainly seem to be a reckless claim. However, as Olson (1975) has pointed out IQ tests are overwhelmingly measures of how well the person has mastered the arts of abstraction and logical inference from textual propositions. These tests certainly correlate well with performance in schoolwork (and so they should as the items in the test are selected because they show such a correlation or are highly correlated with items that do) and they show lesser but stable significant correlations with social class, ethnic status and other such variables that are correlated with spread of literacy.

The nub of the matter, however, is the definition of intelligence as 'thinking abstractly' or 'ability to learn'. In this debate learning, or the evidence for such an ability, is always pushed back to an ability to learn from texts or the blackboard so that 'thinking abstractly' is the issue. We need go back only thirty-five years to find this issue thoroughly disposed of in Isidor Chein's conceptual analysis On the Nature of Intelligence:

"If 'thinking abstractly' were to define intelligence, it would follow that intelligence could only be manifested in thinking behaviour and that the more abstract the thinking the greater the intelligence. Neither of these conclusions accords with usage; they do not apply to all of the facts that have been meaningfully described in terms of intelligence. Of two people confronted with the same problem, not the one thinking most abstractly, but the one thinking most to the point is thinking most intelligently. It is not the degree of abstraction in thought, but its quality that makes the difference. Moreover, the possible implication of this definition that it is the frequency of indulgence in abstract thought that

differentiates between greater and lesser intelligence also carried with it the further implication that a single thought cannot be intelligent, an implication that cuts us off **completely** from the observable referent, the behavioural act. This definition in terms of abstract thought is clearly beside the point." (1945, p.115)

As Chein develops the point it is clear that when we talk about intelligence we must be careful to identify what it is we are talking about, namely, intelligent behaviour. We then have little difficulty in seeing that "an activity is as intelligent as it occurs with reference to all of the relevant factors in the behavioural situation" (p.115). We then find that **"Intelligence is the apprehension of the relevant structure of the total behavioural field - relevance being defined in terms of the immediate and presumptive purposes of the actor"** (p.115).

It will be now seen that I am claiming that with the emergence of this new paradigm and guidelines such as those worked out by de Bono, we will find significant increase in intelligent behaviours. This will not necessarily be reflected in greater skills in textual analysis, and hence IQ measurements. It is a conclusion I find very easy to accept after three decades of experience with the effects of participative democracy at the work-face.

Third, the new paradigm leads to a 're-centering' of the teaching process. It seems appropriate to examine this in the context of the basic skills of thinking, conversing, reading, writing, arithmetic and motor skills. The world wide expressions of dissatisfaction with the educational process have been focussed on the failure of the educational systems to establish the basic skills. Not unnaturally these expressions of dissatisfaction have been accompanied by an insistence that the educational practices return to a more rigorous practice of the traditional modes of education. This is a simple minded solution that would get no marks in Dr de Bono's book but it puts the educational systems in a dilemma. In a world that increasingly frowns upon the use of the stick and allows children unlimited access to television it simply may not be possible to return to pedagogics. If they could return it is by no means sure that they could, by those traditional educational practices, produce people who have a command of the basic skills and yet be productive members of self governing communities or of the 'quality control circles', project teams and self managing work groups that industry increasingly demands. The problem is even more complicated than that. The demand for the rigours of pedagogy typically come from the backward employer who sees himself producing in the bureaucratic mode for years to come. The employer who has seen that more participative modes of production are required sees some part of the problem, but finds no way to express his demand. The self employed are practically voiceless in a society which is overwhelmingly bureaucratized.

The recentering of teaching in the basic skills is necessary as we can now see that the essential skill, in each case, lies in the perception of invariant relations and distinctive features that are present in characteristic stimulus arrays to be found in each skill area. This contrasts sharply with what is seen as appropriate teaching if knowledge is only that which has emerged from the logical, abstractive layouts of others: in this latter case the methods of rote-learning and stimulus - response (S-R) reinforcement are efficient. Eleanor Gibson, life-long co-worker with James Gibson, has formulated what this re-centering means:

"The S-R formula does not apply to perceptual learning because it is not a response that is learned but a distinctive feature, an invariant, or a structure that makes order out of chaos and produces information. Collating of features, finding, permanent, invariant attributes of things and places and predictable relations in events, is adaptive and achieves cognitive economy." (p.34)

"...R D Bloom (1971) concludes, 'There is surprisingly little clear-cut evidence dealing with the ability of operant techniques to alter such covert features of reading as comprehension or the formation of inferences' (pp.7-10). We know of none and expect none, for a schedule of reinforcement cannot even be imposed on let alone produce, comprehension or inference. They must come from within the learner." (p.275)

"Because a learning process that involves abstraction of invariants or inducing rules is of necessity largely internally regulated, the question of motivation and reinforcement becomes very important. If the child must essentially 'do it himself', what will make him do it, keep him at it, and tell him when he has perceived a useful relation?" (p.265)

The issue is put into the broader context of education as a social institution by a study that was simply concerned with measuring what actually appeared to be going on in a primary school:

"The child's relationship to the learning materials is given little opportunity to develop into a spontaneous interest relation because it is overshadowed by the teacher-child relationship. The teacher generally decides what material should be worked on, the relative importance of the different aspects, how it should be worked, the standard of achievement and when work

should cease. It is only rarely that the child's behaviour is spontaneously oriented towards problems posed by the material itself or guided by the demands implicit in the structure of the material. Because the initiative and guidance comes from the teacher the behaviour of the child is oriented primarily towards the teacher and not towards the material to be learnt."

(Emery & Oeser, 1954, p.182).

In the old paradigm the perceptions of the student were a useless and potentially dangerous distraction from the task of instilling proven knowledge and the authority of the teacher had always to be preserved. In the new paradigm this is destructive of learning. If the student is caused to be looking over his shoulder at his teacher he is distracted from attending to what is before his eyes. In the new paradigm the teacher must act so as to vary what is before his student's eyes whilst his own presence passes unnoticed.

Such a different concept of teacher is implied that it might be wise to speak just of the educator.

Some understanding of the role of the educator may be gained from close study of three of the most developed educational practices within the new paradigm Hughes, Catherine Stern's Structural Arithmetic, and de Bono. De Bono, working with highly literate adults as well as five-year olds, found it necessary to provide tools that would block, or at least hinder, the established perceptual practices of taking a quick sampling of the perceptual offering, making a snap judgement about what was offered and retreating into further abstraction and logical inference. To devise these tools he had to abstract from the invariant features of perceptual differentiation. He did not see himself in the business of providing concepts that generalized the contents of the subject-matter his students were thinking about. He depicted the contrast in the following two diagrams.

The tools are contrived to help the learner by blocking his easy slide into perceptual error or making snap judgements. In effect they are reminders to look again, to inspect the broader context over a longer time span, to look for higher order invariants than might emerge from a casual glance. A teaching role is sometimes necessary in order to convince people who have been brought up in the old paradigm that there is information to be gained from perceptual work that cannot be gained by the mental processes of abstraction, classification and generalizing. The blocks make them conscious of processes that are normally habitual.

In Catherine Stern's Structural Arithmetic we find the emphasis is upon discovery not on unlearning old habits. The tools she has created allow children to perceive for themselves those invariances and

distinctive features that we associate with arithmetic and our number systems.

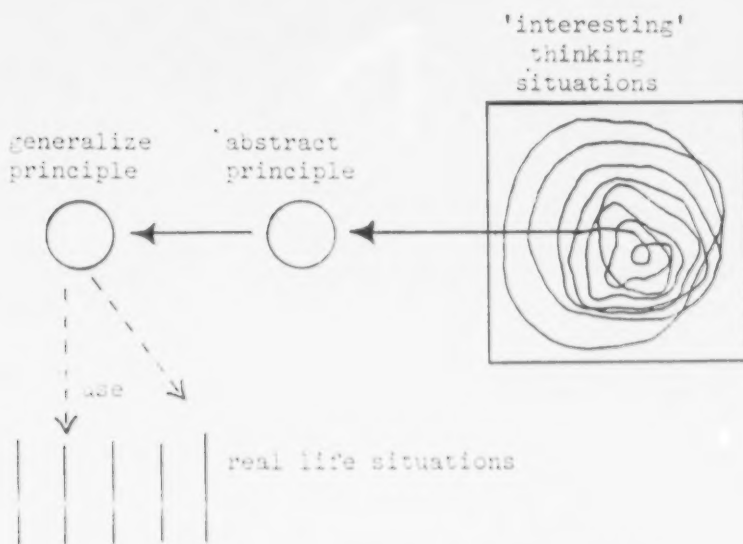


Diagram 1. The Process of Abstracting

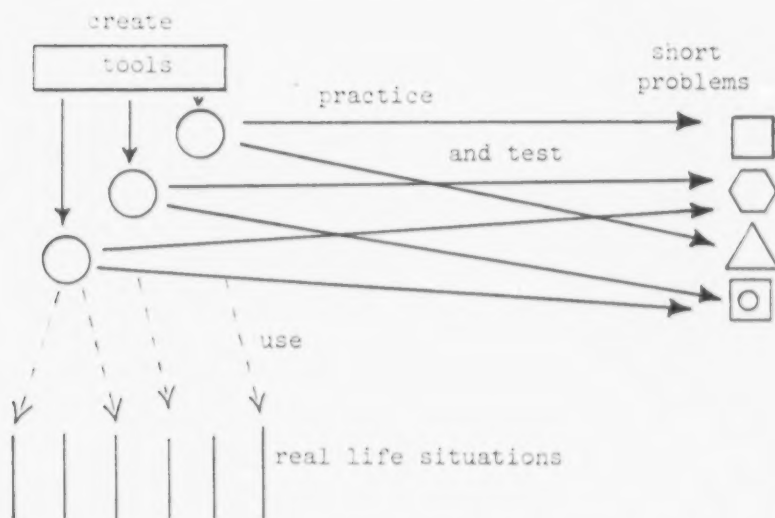


Diagram 2. Tools as Attention Directors
(Adapted from De Bono)

"Structural Arithmetic provides materials to be used in experiments that reveal the structural characteristics of numbers and number relationships. Accordingly children learn arithmetic by insight and not by drill." (Stern and Stern, 1971, p.15)

The teacher introduces these materials for the child to experiment with. Such introduction may require demonstration of the task to be mastered. Thanks to the design of the materials the child can see when he has got it right. The teacher can not only observe whether the child is grasping the relations but also when they are failing. Stern indicates the role of the teacher when the child is failing as follows:

"What can a teacher do when pupils fail to perceive the structure of the stair and cannot succeed in this task? Some may even be satisfied by a random sequence of blocks. Others are able to see that they did not succeed in the given task. For example, one child did not notice the size of each step as he was inserting the blocks, but upon looking at the finished structure said sadly, 'It looks bumpy, bumpy! No Stair!' Should the teacher correct these errors directly? No, this does not give the child the kind of learning experience that will help him to comprehend the structure of a stair. Instead she re-structures the task in such a way that he not only can see what to do next but will be able to learn by insight." (ibid, p.41)

Stern goes on to illustrate some of the ways the task can be restructured to aid the child gain insight but the significant point is that the approach is identical with that recommended by Eleanor Gibson for the learning of reading.

This is a far call from the rote learning of tables and leads to a grasp of mathematical principles that is clearer than can be gained by rote learning of the New Maths. There are two important lessons for us in trying to appraise the likely achievements within the new paradigm:

- it enables the very young and the mentally retarded to grasp the mathematical principles upon which arithmetic is based (see W W Sawyer's Introduction to the Stern book);
- it solves, or more correctly, it by-passes the memory problem that is the bug-bear of all learning in the old paradigm - "The children have experimented with materials that provide experiences from which they can learn and grow. Whatever they have once grasped becomes part of their mental equipment forever. Anyone who has learned to perform a task by having gained insight into its structure will be able to reconstruct whatever has been forgotten." (ibid, p.46)

Some emphasis can well be placed on the last point. The traditional paradigm of learning is also a paradigm of memorizing. Within that paradigm great stress is necessarily placed on forming and strengthening associations and examinations that supposedly test the continued existence of those associations. On the assumption that there are no directly perceivable structures 'out there' this dependence on memory is unavoidable. On the same assumption the prototype of the memory process is the memorizing of nonsense syllables that have no previous associations attached to them and the most important means for building associations is repetition, drill. The fact that the human memory is highly unreliable and prone to forgetfulness and that drilling de-motivates people have to be put up with as some of the unpleasant facts of life.

A great deal of evidence has accumulated to support everyday experience that a lot of learning does not seem to involve such a memory process (Rock, 1958; Asch, 1960; Katona, 1940). This evidence makes sense within the Heider/Gibson assumptions. When structure in the environment can be directly detected, as children detect the principles of arithmetic in Stern's material, then learning is not dependent on drilling and memorizing. In learning to detect the higher invariants in that material they do not have, as it were, to store away 'memory traces' and subsequently engage in some mysterious process of 'retrieval'. Having learned how to detect these invariants they can more easily detect them again in some other setting where that information is needed. The problems of memory, like those of thinking are problems in perception. We are not designed like computers but it may well be that computers are designed on a mythical image of man.

To round out our picture of how the basic learning tasks might look in the new paradigm we turn now to reading and writing. Fortunately a good deal of the groundwork has been done. Eleanor Gibson and Harry Levin have completed an exhaustive study of The Psychology of Reading. Doman and Hughes have evolved a teaching practice that, like Gibson and Levin, takes these tasks as tasks in perceptual learning.

Learning to read and write is, in the traditional paradigm, critical to gaining access to the stores of knowledge in society. Without such literacy education could hardly proceed. Conversely any studies, such as the arts, craft, sport and rhetoric, that did not require literacy could hardly be regarded as serious studies.

However, learning to read and write appeared to be truly formidable tasks. It was a fact that practically every child had learnt to comprehend and to produce comprehensible speech before they began their formal schooling. This was not seen as lessening the task of learning the alphabet, developing a vocabulary, learning to spell,

learning the rules of grammatical construction and, of course, the skills of writing. All of these appeared to require years of drilling to build up the necessary mass of remembered associations. The complexities were such that it is little wonder that experimental psychologists left the matter alone for the first sixty years of this century (E Gibson, p.xi). It is also not surprising that major attention was given to the question of when a child's nervous system might be sufficiently mature and robust to undertake these tasks.

In the new paradigm these matters no longer have the same relevance. The appropriate question becomes, 'what information is present in the visual and auditory structures of speech and writing that enable us to extract constant meanings regardless of the sensory modality and regardless of the wide variations in the stimulus array?' When we ask this question it becomes obvious that the unschooled toddler is already well versed in extracting information from his physical and social world. In learning to comprehend speech and to produce comprehensible speech the toddler has demonstrated a grasp of the world-with-symbols. The critical passage from a world-without-symbols to a world-with-symbols has been made before formal schooling even begins.

It is as well to pause here and consider how that particular transition is so frequently achieved with so little apparent effort at teaching - this might tell us something about what could be expected with reading and writing if we are not blinded by epistemological assumptions.

First, it is very relevant that the Wernicke and Broca areas of the left cortex "seem to be organized explicitly for the processing of verbal information" (Geschwind, 1979). The audible component of speech, but not other kinds of sounds, and the visual signals of writing are both apparently processed in the Wernicke area and proceed to the Broca area for speech production. Obviously people have evolved for speech in much the same way as musk rats have evolved pheromones for intra species communication.

Second, "The list of distinctive features that exist in the languages of the world is supremely restricted" (Jakobson, 1971, p.7). All of the known languages have evolved to use a finite and limited set of perceptually distinctive features for their phonemes and their morphemes. These features are clearly based on the inherited capabilities of the human species for modulating, sustaining, starting and stopping the flow of air in their air pipes, in a limited set of ways (Studdert-Kennedy, 1974).

And, as noted above, there is an ability to extract these kinds of sounds from the auditory field. "There is a directness in perception that makes it difficult to hear the sounds, even of a totally foreign language, as purely auditory events. We hear them instead

phonetically. That is to say, we hear them as sounds generated by the vocal organs of humans...this level is no longer one of sound, but rather of some intricate, abstract derivative from the initial auditory analysis" (Studdert-Kennedy, 1974, p.2351). The distinctive features that characterise speech are invariant over a wide range of differences in conditions of production (eg, in a party). These three characteristics, economy, reproducibility and detectability, are what we would expect of a communication system that has evolved to support survival of a species.

One further question remains. The ease of transition to spoken words would be readily explained if the spoken words shared some of the distinctive perceptual features of the objects or events that they symbolize. In onomatopoeic words, such as choo-choo for steam engine, such a direct mapping of phonemes to a distinctive feature of the referent is obviously present. Such instances are rare and probably misleading. Nevertheless the study of poetry and the pathbreaking work of Heinz Werner on the physiognomy of words, particularly with non literates, are an insistent reminder that there is probably something there. Since Jakobson has shown that phonemes are unique clusters (combinations) of a few distinctive features it would seem that if we are to disclose the mapping it will be at that level. We would not expect all spoken words to have strong physiognomic features because of their own evolution to provide context for each other, but awareness of those that have might make it easier to introduce children to the perceptual task of 'seeing through hearing'.

To resume the main trend of this discussion: we are discussing how easily young children make the transition from **seeing through hearing**. The next transition, the transition to literacy, is to **hearing through seeing**. This transition is greatly facilitated by the fact that the young learner is already skilled at producing speech. He or she is thus able to test whether they can uniquely match what they see in a grapheme with a morpheme or phoneme. Initially, of course, a child is introduced to the written word by someone who is already literate in that language. The first learning task is then to produce a phoneme or morpheme that matches the speech sounds that someone else matches to the particular visual symbol. Remember that they are already well-versed in producing speech to match the speech of other. The only problem they face is that of identifying the uniqueness of the visual symbols before them. Thus, for instance, they already know dogs and they know they are the invariant referent of the spoken word dog (a dog does not get called cat although lots of other things might occasionally get called dog). The visual symbol of 'd o g' is novel only in that it is a certain kind of **visual** symbol; it is not novel to find a symbol referring to dog.

In the traditional paradigm we confronted this as another task that required the build-up of a massive apperceptive structure of stable associations. We seem to have made a mountain out of a molehill.

If we regard this as a perceptual task all we have to do is help the learner to perceive what is unique and invariant:

- identify those few distinctive features that, in combination, define the uniqueness of graphemes and encourage the learner to look for these;
- present the graphemes writ very large so that the distinctive features are readily perceivable to young people who have developed no strategies for searching text (Hughes, 1971);
- Introduce only a few grapheme at a time. Rock's studies and Asch's, demonstrated quite clearly that what we have called an association is a perception of a unique relation; this perception is retarded by undue clutter or too many conflicting perceptual demands just as surely as it is by absence of obvious distinctive features (the above two points).

Repetition *per se* has no role in making this transition to 'hearing through seeing'. The role of repetition is practice in detecting the unique relation in differing contexts.

This seems ridiculously simple, but that is the message coming from the meticulous study by Eleanor Gibson and Barry Levin and the down-to-earth practice of Doman and Hughes.

By basing this education on the perceptual capabilities that children already have we are able to achieve a simple self-motivated transition to reading as soon as spoken language is learned; ie, well before the age of formal schooling.

The further transition to writing offers little problem if the distinctive features of graphemes have been grasped in learning to read. As might be expected in such a perceptual task the transition to a 'world-with-symbols' is heavily influenced by the extent to which the child is growing-up in a world-with-symbols. "Children seem to develop tremendous sensitivity to differences in graphic materials simply by having plenty of graphic displays around to look at" (E Gibson, 1975, p.239). Nevertheless there is "some early, painless, and apparently self-motivated learning about the writing system for the school to build on later" (*ibid*, p.233). In a review of studies of the development of children's spontaneous scribbling Levin concluded that by three years of age they are producing forms that "contain features that are characteristic of writing and not of pictures" (*ibid*, quoted, p.233). By the age of three children, even those in environments that were impoverished with respect to symbols, distinguished writing from pictures (*ibid*, p.239).

The evidence indicates that the written word is processed in the same area of the left cortex as the spoken word; ie, the Wernicke area. It seems difficult to imagine that any evolution of the central nervous system could have occurred in response to the very recent emergence of writing. It is not difficult to imagine that writing systems evolved to take advantage of the particular set of distinctive characteristics utilized by the Wernicke.

In the traditional paradigm the achievements of Doman and Hughes in teaching preschool children to read and write had to be regarded as freakish and treated with the same sort of reserve as Stern and de Bono. They were, in effect declaiming that 'the emperor has no clothes'. In the new paradigm their achievements are only what one would expect.

The achievements in this field need not stop with cessation of the self-defeating educational practices of the old paradigm and the introduction of the simple search and display strategies suggested above. A major task within the new paradigm would be to explore the physiognomic properties of the semantic relation **and** the relations between the written word, the spoken word and the referent, as a set. We know enough to know that this exploration needs to be at the level of distinctive perceptual properties and not at the level of phonemes and graphemes. We know also, from the poets, that some written words have a 'fittingness' to their spoken equivalent and to their mutual referent that is not possessed by other words. Such words offer a royal road from one system of symbols to another. Aphorisms and folk-sayings offer frozen capsules of meaning, invariant over time, and to some extent over cultures, that serve similar functions.

These explorations have been deliberately focussed on the primary tasks of education. The thought was that if the new paradigm has substantial consequences for the teaching of the three Rs it could hardly not have a similar magnitude of effect on subsequent learning. I should have learned better. When we engaged in the democratization of work we figured that if we could show a beneficial transformation in such places as coalmines, mills and factories then the possibilities for places of relatively privileged white-collar work would be obvious. We found instead that Weber's theory of bureaucracy created a special form of blindness. Sure enough, we find special reasons for not regarding the transformations at the level of the three Rs as evidence for what could be achieved at the higher levels of education. The three Rs is now seen as 'really a training in skills'. 'Real learning' is defined at some point beyond where mass learning finishes - somewhere beyond first degree level. This redefinition of learning is very convenient but not sustainable. Pioneering work, such as that done by Stern and Hughes, has already been done at the higher levels of education (Ackoff, de Bono, Emery, Williams). At the higher levels

of education there is the same reliance on abstraction, classification and generalisation. Memory has the same central role in learning and examination. What we have had to say in contrasting searching with researching applies with as much force at this level as at the level where children are learning the three Rs. More so. The weight of evidence is that educated; ie, literate, adults find it particularly difficult to use the evidence of their own perceptions. We have become particularly sensitive to this problem in the past decade or two and come to espouse a 'continuing education' that goes beyond normal education and somehow or other comes to be described as 'learning to learn'.

The implications of the new paradigm for this emergent field of continuing education need to be considered because this is **par excellence** the field that concerns the serious education of adults so that they can better understand and advance their most serious purposes in life.

Continuing education emerged from widespread recognition that social traditions and authority structures were changing at such a rate that:

- . the need for education now continues long after formal schooling ends as important social changes occur that were hardly conceivable in the minds of those who designed the old curricula;
- . the appropriate aim of such education should be 'learning to learn', not just more schooling.

'Learning to learn' was an idea that was not in anyway referring to the traditional concept of study habits. The core referent was to learning for oneself, not teaching oneself from text books.

In my own attempts to dissect this new concept I was much taken with the extent to which it centred around **unlearning** and not just learning of new contexts and new details (Emery, 1975). It did not matter whether the learnings concerned local planning, corporate objectives, work organization or the like: the critical learning problems seemed to lie in unlearning habits of thought and cognitively restructuring or recentering what was already known. This parallels de Bono's experience with trying to teach adult people to think.

When what one has been taught has also been taught as **The Truth** then there are no built-in stop commands, as there has to be on a computer program. In some parts of experimental science there are such signs but this is the exceptional case and not always very effective there. In the traditional paradigm knowledge adds on knowledge and the progress of knowledge is simply assumed to be an inevitable process of accretion. Details will have to be corrected, sometimes a rush of details will have to be added, but the notion of serious restructuring

belongs to the prescientific era when people could believe in things like phlogiston and witches. That is, the notion of restructuring or recentering is alien to the traditional paradigm of knowledge and to the people who have absorbed this paradigm as a world view. It is the most difficult of learning tasks.

To enable people to achieve a capability of learning to learn we have had to devise ways in which they can cope with the boot-strap operation of unlearning (for it is that kind of operation in the traditional paradigm).

To this end we gradually evolved the tools that are labelled Search Conferences and Development of Human Resources Workshops. These are tools of the same nature as the tools that de Bono had to devise to help adults learn to think. The effect of these tools was to enable people to achieve in joint activity what they could not achieve alone; ie, to accept that their pooled perceptions disconfirmed their assumptions and provided alternative conceptions of reality. These practices, which we evolved for adults concerned with their continuing education, do not differ significantly from what Paulo Freire evolved for the same purposes with illiterate peasant of the 'Third World'.

The new paradigm allows us to identify the referent for the slogan 'learning to learn' (and slogan it was becoming because within the old paradigm it was close to gibberish).

The new paradigm gives meaning to the phrase 'learning to learn'. In learning to learn we are learning to learn from our own perceptions; learning to accept our own perceptions as a direct form of knowledge and learning to suspect forms of knowledge that advance themselves by systematically discounting direct knowledge that people have in the life-sized range of things, events and processes. This is hardly a learning activity that is reconcilable with the concept of learning that is embedded in our current institutions of learning. They are committed to the view that learning is an indirect, esoteric and tortuous path of research with a split off element concerned with transmitting the results to students. What is unavoidable in the study of nuclear particles and galaxies has become the prototype of learning, as did the study of unobservable homunculi in the middle ages. I suggest that in these cases the form dictates the content. Real knowledge, and hence real learning, is taken to be that which fits the ruling paradigm. Knowing ourselves and the world we experience and live in takes a poor second place.

There is a certain irony emerging here. In the historical period in which continuing education has been emerging there has also been emerging a massive growth in electronic computerization and communication. The latter has been seen as the inevitable source of an **information revolution**. These new technologies have been designed on

the assumptions of the Lockean paradigm and Newtonian Optics. They are providing a paralyzing flood of signals from which human beings are finding they are unequipped to extract information, or in the case of the telephone, unprepared to make use of the information that is transmitted (Emery, 1980). The real information revolution lies in the emergence of the new paradigm. **As everyone with some intact perceptual systems becomes a selfconfident source of information generation will we be faced with a real information explosion?**

There seems little room for doubting that with the emergence of industrial society, the mass society, we offered mass education in the same way as we offered popular democracy - the appearances without the reality.

We have discussed above how this particular feat was accomplished. We also discussed how the new paradigm could transform the learning of the basics, the three Rs. These transformations, and the methods of de Bono for teaching thinking, would all help to restore confidence in the direct access to knowledge that is available to young and old alike. To make only these transformations would be to render obsolete the dichotomies in learning potential that have been enshrined by the old paradigm.

We should, however, be thinking beyond this.

If perception is so central to thinking and learning should we not be reconsidering the roles of art and poetry in education? Should we not be giving thought to the education that is to be gained from allowing that we might learn from the other sense, the haptic and those of smell and taste?

One has simply to raise these questions and the direct concerns are expressed about the educational implications of the new paradigm. It is yet another excuse to land us back with the earlier suggestions that the serious business of education be replaced by permissive playfulness? Is it not an education in sensuality?

However, the seriousness with which we proceed to replace the old paradigm will probably be best measured by our answers to those questions. The move from one paradigm to another is literally a figure-ground reversal. We will have to notice that a child trying to capture on paper an invariant that he perceives is more given to frowning, a puckering of the lips and other signs of intense concentration than a child trying to recall an algebraic formula. More than anything else we will have to notice that humans, regardless of their educational levels, achieve creative thinking by grasping 'the universal in the particular'. This they do by perceiving the higher order invariants presented to their own perceptual systems. These higher order invariants are embedded in the total context of objects,

events and their environments. They bear no necessary relation to the higher order abstractions that are based on qualities that appear to be very frequently associated with particular classes of objects or events; eg, that swans are white and all people are selfish.

The figure-ground reversal we are confronting is one in which the education in the three Rs can be safely left to parents and elder siblings. The professional role of teachers will be centred on the complex task of guiding children, and adults who have been blinded in the old paradigm, into the multiplicity of ways in which they can enhance their capabilities for extracting information from their world.

To summarize:

Our perceptual experiences are engagements with an environment that is already informationally structured. They only begin to approximate the traditional notion of sensory impressions when we are engaged in trying to perceive ourselves perceiving (Chein, 1972, pp.136-7).

Our perceptual systems have evolved so that we, and other animals, are, at birth, attuned to detect invariances in the available flow of energy and particles that are ecologically significant sources of information. "Furthermore, there is ample evidence that the senses are not only generally preattuned but **become** more sensitively calibrated to pick up those exigencies of the environment that bear directly on the survival, success and well-being of the perceiver - what has sometimes been called the **education of the senses**." (Shaw and Pittenger, 1977, p.107)

This in-gathering of information takes place in non-Euclidean space. If it was transmitted through media that behaved as Euclidean space most of that information would be garbled beyond retrieval. Admittedly, "There are what might be called 'Newtonian oases' in perceptual space. Within a frontal plane, space is approximately Euclidean; and up to a few yards from the observer, shape and size are actually seen as unchangeable" (Arnheim, 1974, p.290). Even within that flat place we cannot always 'see straight', as is demonstrated by the well known Muller-Lyer and Ponzo illusions. Viewing beyond the first few yards, it is almost impossible for someone not trained well to 'see in perspective' to see things as if they were just a distortion of a Euclidean scene.

Despite the evidence of the senses, schooling, within the old paradigm, appears to move us a long way toward the assumptions of Locke and Herbart. The preschool child's concept of space is topological; by twelve it is Euclidean (Piaget and Inhelder, 1956).

Within the new paradigm one would hope that by the age of twelve a child would have as many geometries as his world requires, if it is to speak to him or her.

In the following table I have tried to summarize the differences in education practices and experiences that have been or are likely to be observed in the different paradigms.

SUMMARY TABLE

	Traditional paradigm	The ecological paradigm
<i>A. The Practice</i>		
object of learning	transmission of existing knowledge, abstraction of generic concepts	perception of invariants, discovery of serial concepts, discovery of universals in particular
control of learning	asymmetrical dependence, teacher - pupil, competition of pupils	symmetrical dependence, co-learners, cooperation of learners
coordination of learning		
a) behaviour settings	school/classrooms, age-grading/school calendar	community settings, synchronized to and negotiated with community settings
b) timing	class time-table	
learning materials	text books, standardized lab experiments	reality centred projects
learning activity	paying attention, rote practice, memorizing	discrimination, differentiation, searching, creating
teaching activity	lecturing, demonstrating	creating and re-creating learning settings
system principle (after Abraham 1953)	pedagogy "the mirror"	discovery "the lamp"
<i>B. The Experience</i>		
cultural mode	work/religion 'serious drudgery'	active leisure 'exciting, frustrating'
dominant group emotions (after Bion, 1961)	Dependency Flight-flight	Pairing
personal development	conformity-bullying	tolerance of individuality
	divorce of means and ends - cheating self-centredness	depth and integration homonomy
	hatred of learning (& swots)	learning as living

In the above table I have not attempted to contrast the effects on the personal development of those adults whose lives are committed to teaching. This is only because I am not sure that a life-time commitment is necessary or desirable in the new paradigm. In the old paradigm Charles Dickens, "Mr Gradgrind is still very much with us. The poets tell us more about the new 'teacher': and little wonder that Plato would ban the poet from his Republic."

"If he (the teacher) is indeed wise he does not bid you enter the house of his wisdom, but rather leads you to the threshold of your own mind." (Gibran, 1923)

"It must go further still: that soul must become its own betrayer, its own delivered, the one activity, the mirror turn lamp." (W B Yeats)

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PART II. PARTICIPATIVE DESIGN AT THE ORGANIZATIONAL LEVEL

This part discusses the concepts, practices and outstanding issues in participative design as it applies at the level of the discrete organization. Many of the issues are also relevant at other levels but they usually surface first and are certainly more frequently debated within the context of a discrete group or organization. Regardless of the size of organization, community or governmental system, the small group remains as the basic building block upon which the more extended forms (Part III) of democratic apparatus rests. It is important, therefore, that these blocks are brought into being by the most congruent methods available, those which will help ensure their strength and stability while not impeding their evolutionary life.

This part begins with an argument which confronts one of the central purposes of democratization. 'The Light on the Hill' puts the whole issue squarely on the board of current political and professional thinking about industrial democracy, productivity and economic development. Emery (F) argues that the elevation of multiskilling and retraining above people's needs to be involved in decision making is misplaced. Multiskilling will not deliver the goods unless there is a form of work organization that demands, motivates towards and creates new or higher levels of skills. One of the crucial advantages of democratic groups over the one person-shift as the unit of bureaucratic structures is that it provides learning and the conditions for continuous learning. This is of course one of the six criteria for psychological satisfaction and also one of the reasons that participative design workshops have become a basic tool of many adult educators.

'Participative Design: Work and Community Life' is the 1985 edition of this historical document. We have found little reason to change its basic lessons over time, apart from the need to add learnings from variations tried and experienced in different settings. In 'Further Learnings about Participative Design', Emery (M) describes and analyses some of these practical variations. In 'Matching Effectivities to Affordances in the Design of Jobs', Emery (F) explores the six psychological job requirements of work (not necessarily paid employment) within the framework of ecological psychology, thereby enlarging our understanding of these basic factors.

Two other small papers conclude this part by arguing against two of the often perceived alternatives to participative design workshops and search conferences. 'Laissez-faire vs Democratic Groups' presents the most recent evidence to confirm Lewin's finding that 'doing your own thing' is not a half way house to democratization and does not, therefore, provide learning about the alternative to autocracy. It is part of a continuing argument with those within the profession who do

not see the light on the hill and/or do not realize that productivity is intimately tied in the long term only to share decision making about coordination, control and planning; those functions which provide the conditions for continued learning, commitment and ultimately, productivity.

'Getting to Grips with the Great 'Small Group' Conspiracy' is part of the same argument as it outlines the distortions and paradoxes which are inherent in the wave of efforts to teach people how to be democratic and communicate, without changing the structure to which they must return, or even without teaching them how to recognize and deal with it. The misconceptions involve the nature of 'small group', laissez-faire as an alternative and deeply socialized needs to maintain the status quo. They also touch upon some fundamental misunderstandings about human communication. We are by nature, excellent 'communicators' but only when it is in our interests to communicate quickly and accurately. Common purposes embedded in group decisions provide a perfect setting and reason for effective communication and most 'communication problems' can be solved by the implementation of a participative design. Both these papers make a case for the genuine alternative as a highly implicative process.

THE LIGHT ON THE HILL, '88 - 'skill formation' or 'democratisation of work'

Fred Emery, October 1989

For the past two years the notion of 'Work Restructuring' has been at the centre of national debates. With the recent decisions of the Industrial Commission it would seem that the die is cast - the nation is set on the course of Restructuring. Having set course, all that now remains is to take off and proceed in that direction.

Unfortunately, little attention has been directed to how we take off and fly. The major focus of discussions to date has been on skill formation and the opposition of short-sighted managers and craft unionists. In focussing on this they have directed attention away from what, I will argue, is the prior and central question of why industry persists with forms of work organization that demonstrably lead to deskilling, low productivity and chronic unconcern for quality.

The simple fact of the matter is that industry employs the mix of skills that best suit its dominant form of work organization. Industry feels no need to adapt its employment structure to the mix of skills produced by the educational systems (except insofar as it might give preference to Arts Graduates for clerical jobs or give preference to degreed engineers for draughtsmen's jobs). By the same token, industry is not at all motivated to invest in creating or materially rewarding skills that cannot be used by their forms of work organization.

If one insists on skating over the surface of the matter, then it seems sensible to suggest to politicians that they restructure the educational system so that it pours out the skill mix that industry should have in the future, and offer monetary incentives to industrial concerns to retrain for this future. The reality is that employers will use graduates for their purposes; eg, engineers as draughtsmen or classy sales representatives, regardless of the purposes of their educational curriculum. If employers introduce training schemes because of a monetary incentive, then one can be sure that most will degrade training to turn the scheme into a profit earning subsidy scheme.

There is no doubt that a different skill mix will be needed for a high technology industry. It is not at all sure whether this requirement can be met by a small core, skilled force and a mass of unskilled workers or robotic machines.

There is also no doubt that skill formation is not the critical problem.

The critical problem is the introduction of a form of work organization that both demands and creates new skills for an obvious return in higher productivity.

It is the critical problem because unless it is solved there is no way that investments in skill formation will lead to higher productivity. Such investments will have the unintended consequence of protecting and bolstering the old form of work organization; of sustaining low productivity and congealing the islands of poverty and unemployment. Those investments will certainly do that because, if the demand for skilling does not arise from the felt demands of industry, of the sort that would arise from adopting the new principle of work organization, then the investments will flow down through the bodies that have educated and controlled training for the old form of work organization.

It is the critical problem because, if it is solved, we find that enterprises and companies quickly discover the value of training and education, and quickly discover the most expeditious and cost effective ways to give the self managing work groups the knowledge and skills they need to do their job, and go on doing it despite the absence of individual members due to illness, holidays or absenteeism. Due to the learning that can be shared on the job, when employees find it in their interest, the demand for specially financed training is usually considerably less than what industrial trainers deem to be necessary, or what industry training levies, as in the UK, provide for.

The problem is critical not only for industry and its productivity but also for the structure of the labour market and, hence, the shape of society. If a modern economy like Australia's remains tied to the old form of autocratic work organization then productivity will continue to yield lower returns to capital than interest rates. Naturally new capital will not flow into industry. Existing investments will be protected by cannibalization of the lower grade assets and minimizing the steady haemorrhaging through wages and salaries. The unions, unless they have extraordinary political clout, have little option but to protect their institutional stability by concentrating on the interests of the diminishing number of employed, fee paying members. These will tend to be the skilled workers who are hardest to replace if there are temporary business upturns. On the other hand, the employers still wish to free themselves from the organised power of the traditional skilled craftsmen. They will seek, in the new technologies, to concentrate technological decision making in the hands of the new tertiary educated technologists; people who are very willing to associate professionally but eager to strike personal employment contracts with their employers.

The picture we have drawn here is not a futuristic picture. It is what has been happening in most of the major corporations for the past

twenty years (with some exceptions, to which we will come later). Over this period they have consistently shed labour whilst increasing the proportion of employees with tertiary educational qualifications, and increasingly shed, to subcontractors, the unskilled work. Subcontractors are usually less controllable with respect to conditions of employment; wages, hours, compensation etc. The net effect of these changes has been a polarization of the work force to a smaller fulltime educated or skilled group and a growing mass of part time and unskilled or unemployed workers.

If this restructuring of the skill mix continues, then the social results are fairly obvious. Those with steady jobs and the incomes that go with skilled or educated employment status will gravitate to suburbs and dwelling areas of like placed people. They will live and be serviced in a social world that has minimal contact with the other more populous but poverty ridden world of the unskilled, uneducated. But it will be in a social economy that is faltering and dying.

The alternative form of work organization is the democratization of work. Quite simply it means that decisions about coordination of work should, as far as possible, be made by those who are performing the work. Not made by non-working supervisors.

This is the form of work organization that the science based corporations started to recognize as the necessary future in the sixties and early seventies. They have not changed course in the eighties because they have found that it is the path that leads to increased productivity.

Moving along this path produces a different social world.

It is puzzling, and disturbing, to see 'skill formation' now being singled out as the royal road to productivity.

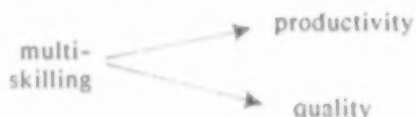
This is not quite the direction that one would have expected from a Labor Government. It is certainly not the direction taken by the first Frazer Government when it formed a Dept of Productivity under the ministerial guidance of Mr Ian McPhee. It is not the direction envisaged in the unanimously adopted resolution of the 1976 ACTU national congress on industrial democracy.

The evidence that is brought forward to justify this position is less than satisfactory. It is contended that Australia needs the sort of skilled work force that exists in Sweden, West Germany and Japan. It is forgotten, or overlooked, that those countries had that sort of skilled work force in 1970 but found that they could not get commitment to productivity from their work forces, and hence turned to democratisation of work.

Are we so blind to history that we have to invent an Australian wheel? At a time when productivity is a national necessity, and capital is in flight from industry, it does not make sense to divert operating capital (and in the case of the teaching institutions, investment capital) to the training and education of people who are not committed to using their abilities in order to increase productivity. And the training and education provided by the institutions (and professional trainers?) will be very little related to the immediate requirements of industry.

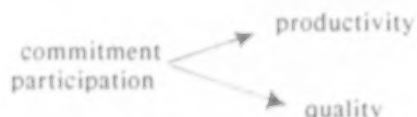
This can be summed up.

Proponents of 'skill formation' as our primary path appear to be assuming the following causal pattern:



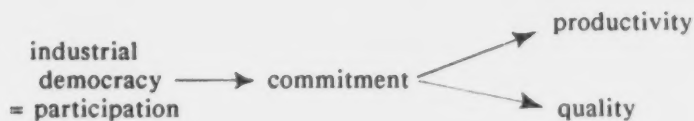
If the traditional work organization remains in place, then this is a thoroughly disproved hypothesis. Within that structure industrial engineers know that profits come from following Fred Taylor's dictum about specializing and deskilling the work force, and paying accordingly. The skilled workers know that their economic security rests on having a mass of unskilled labour. We are simply back where the Swedes, Germans and Japanese were before circa 1970.

In the 1960s, that is almost thirty years ago, the Swedes, Germans and Japanese had already seen that the basic causal structure was as follows:



It would be foolish to pretend that this was the first time that this understanding was widely accepted. It was very prevalent after World War 1 and even more so after World War 2.

In both cases an over riding national need for greater industrial productivity brought about an awareness that production was critically related to employee attitudes. The first major solution was to extend to employees the right to vote for representatives to present their views to management; Works Councils, or, in the British Civil Service, Whitely Councils (1923-). This was seen as 'industrial democracy', and in many European countries after World War 2 was introduced by legislation for government owned and large private enterprises. The causal model this proposed was as follows:



These schemes actually produced commitment; commitment of a new breed of worker politicians to gaining and preserving positions on the Works Councils as a desirable alternative to time otherwise spent in labour, without any recognition as someone special. No one has been able to document improvements in productivity or quality that could be surely attributed to the establishment of these representative worker parliaments.

After World War 2 there were two alternative and very popular hypotheses about how to create employee commitment, and hence raise productivity and improve the quality of output.

The first, owing much to Elton Mayo, the famous Western Electric experiments and the so called Human Relations movements, was that the humanization of the foreman - worker relation would create the desired level of worker commitment:



This idea got nowhere. Whatever the foremen learnt in their human relations training had then to be adapted to what was demanded of them on the job. The best of the foremen responded to the training and then resigned in disgust at the managers who had sent them on the training courses but had no willingness to change the traditional work organizations.

The 1960s fad, after 'Human Relations', was 'individual job enrichment' usually associated with the name of Fred Herzberg. Herzberg had accepted the experimentally established facts that humans are more prepared to commit themselves to completing a task if the task offers a variety of challenges and opportunities to learn new things. (Conversely, that they are turned off if the task is simply a repetition of well learned skills.) He hypothesized that if employees were given enriched tasks (requiring multiskilling!) they would be more committed to doing better and more productive work:



Herzberg's ideas were widely applied because at that time, the mid-sixties, the decline in productivity was becoming very apparent to the major corporations, particularly those with high investment to labour ratios.

Job enrichment schemes often produced good initial results. There is not a well documented case of any such schemes surviving the honeymoon period.

These schemes always accepted the basic framework of the traditional work organization (which might explain their temporary popularity in the United States). Within that framework they sought to equalize task benefits by robbing Peter to pay Paul. That was bad news for the Peters of the skilled labour fraternity. It was also an arrangement that could be overturned by management overnight. It was no basis for an employee to respond with any deep lasting commitment to company goals, let alone concern him, or herself, with productivity or quality.

It was out of this series of false starts that there emerged the hypothesis that employees might accept commitment to the achievement of corporate goals of greater productivity and better quality if they knew that they had a real say in how their part of the job was done (whether their part was production, storing, R & D, accounting, delivering, marketing or managing). Here the concern was not to ape the forms of representative democracy. It was not a call for a replay of so called Industrial Democracy, a proven false path, but a call for the democratization of work itself.

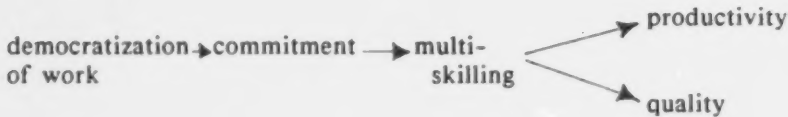


The democratization of work can only be achieved by allowing to those who are responsible for doing a job the power to decide how they can best coordinate their efforts. If they are denied that power then they cannot be held responsible for the outcome of their joint efforts and hence can take no responsibility for the outcomes. They can often be made responsible for their part but not for whether it fits the other parts.

The matter does not stop there.

If groups of workers are given responsibility for a group task, then they will usually require a degree of multiskilling that is far beyond what has been required for traditional work organization. In the absence of adequate multiskilling their commitment to work goals will

normally lead then to far outstrip traditional work forces in productivity and quality. With multiskilling the difference should be multiplied.



We are now focussed on a pattern of causal determination that is well proven in practice. There are here none of the gaps in explanation that characterize fads in organizational development. There is no scientific problem about what should be done to rectify the social problem of low productivity and poor quality of product.

There is obviously a social problem in the changing of traditional work organization; right here in Australia, 1988. It is obviously a problem of 'who is going to bell the cat'.

In response to the views outlined above it has been argued that I have failed to grasp the new dynamics in the workplace that follows from the 'Restructuring Agreements':

'broadbanding' agreements ---> structured career paths ---> then, 'Enterprises can make their own decisions about job design..'

The point I argued is that agreements about broadbanding of job classifications are spurious agreements unless there is a prior agreement to democratize the workplace. The spuriousness of broadbanding agreements that are not underwritten with such a commitment will quickly appear in the hard realities of the workplace. People in the workplace, managers as well as workers, will just become more cynical and distrusting of their leaders; of the Arbitration Courts for registering such agreements and of the politicians who dictated the process.

If the politicians and civil servants involved in forcing industrial restructuring 'down from the top' were serious then they would insist that the Arbitration Courts not register such agreements until they were satisfied that there was a genuine commitment to new forms of work organization. The traditional forms of work organization would simply become slacker and less efficient if they adopted broadbanding. Any gains from elimination of old restrictive work practices and erosion of the prerogatives of skilled workers would be short lived as the costs of worker compensation and quality defects rose.

I have argued that the new forms of work organization need to be more democratic so that they will generate a workforce committed to productivity and quality of the product. It would not seem

appropriate that the Courts be directed to favour any particular new form of work organization. They should simply insist on evidence that whatever new form is suggested it will produce gains in productivity and quality control that more than offset costs of broadbanding. If valid alternatives to democratization of the workplace emerge, then so be it, as far as the Courts are concerned. Others can confront the implications.

It could well be that the Arbitration Courts will be proven to be incapable of assessing whether broadbanding agreements are genuine. Under the restrictions of what were termed to be 'managerial prerogatives' the Courts have always, in the past, excluded consideration of such matters and developed no relevant expertise. If the Courts fail in this, then it will soon become apparent and, in any case, it would simply mean that the matter returns to the enterprise level, and that yet one more 'revolution led by politicians' has failed.

How then should be proceed?

Within my perspective multiskilling is usually, but not necessarily, an element of job redesign. Where multiskilling emerges there may emerge a skills based career path. At lower levels of technology multi skilling means no more than training on the job - no special agreements or training investments are needed. Even at higher levels of technology that require some off the job training in techniques or skills (eg, forklift truck driving, repair work and word processing) the range of work may justify nothing more than payment for possessing a range of proven skills. Those considerations fall far short of defining a career.

If we look at this matter from the position that I am espousing what do we find? We will find that multiskilling, reward for skills possessed, and possibilities for career structures emerge as elements of job redesign, at some levels of technological complexity.

There are four steps which I would consider as essential if restructuring is to achieve its stated aims:

Before even considering what award amendments they will submit to the Courts, management and workers need to explore, in very concrete detail, what could be achieved in the various parts of the enterprise from transferring some managerial responsibilities and authority to the workforce; ie, from moving toward an organization based on self managing work groups. Generally speaking this will require some form of 'participative design workshop'; for the simple reason that there is no traditional form for such consultation.

If there is agreement between the workers and management in the enterprise that there are significant gains to be had from a

redesign then, there needs to be further agreements with respect to:

- the degrees of autonomy that should be allowed to each work group (it will vary). The limits will usually be specified in terms of production and quality targets and controls over group membership;

- the levels of multiskilling required for the group to meet its targets at minimal levels of manning and labour reserves.

- how the increases in profitability are to be shared. There are only two practical ways to approach this problem. A group bonus system can be established, leaving it to the group to decide on the distribution; or, payment can be reviewed regularly, as it would be in ordinary labour negotiations, and levels of attained skills would determine distribution within the group.

These are matters that have to be considered together. They cannot be dealt with in isolation of each other.

If, and when, such agreements or understandings have been arrived at then consideration can be given to seeking binding agreements from the Courts.

Regardless of whether Court Agreements are gained on broadbanding of job classifications the enterprise agreements on the other matters will require management to redefine career structures for foremen and, most likely, for middle management. (I simply note, in passing, that officers in the Norwegian merchant marine fleet practically always came up through the ranks. That fleet competed rather well in the international market.)

It seems quite crucial for these developments that the role of supervisor be not only redefined in terms of content; ie, from control to coordination but redefined in status as the first step in a managerial career. We will also confront a marked reduction in middle management positions and hence a reduction in promotional opportunities. The reduction in middle management positions is not forecast as a consequence of the new information technologies, although that might be a factor. It is forecast as a consequence of the shift from bureaucratic to democratized work organizations. The 'system principle' of bureaucracy is that the decisions about coordination are always located at least one level above that at which the work is actually performed. Only thus can the work of each subordinate be subjected to the control and judgement of his superior.

This applies at every level in a bureaucracy and hence we find that a large proportion of middle management jobs exist simply to supervise subordinates without contributing materially or directly to the work of the organization.

In these remarks I have simply tried to point out that whilst the arguments for focussing on skill formation can be elaborated at length the fact remains that such discussions are academic unless we can define the context in which people are motivated to use the skills they have, or command. I am not criticizing the political decision to offer wage incentives for those who engage in industry restructuring. I am critical of industry consultants who recommend the short cut of skill formation with the wishy washy expectation that job redesign will naturally follow.

Appendix

Neumann J 1981, 'Why People Don't Participate when given the Chance', Industrial Participation, No.601, Spring, pp.6-8.

Research undertaken by the Tavistock Institute of Human Relations challenged the usual assumption that people always welcome participation. The reasons why it makes sense to an employee not to participate were investigated; several categories of explanations, other than personality, were identified. These broadly were structural, relational and societal. Some examples of when people do not participate are when: the organization's real decisions are made outside the participative forum; rank and status continue to be more important than competence and mastery; past and present adversarial politics have led to protection of self and others.

Comment

The first two examples confirm our long standing belief that people can tell when they are being deceived and manipulated. Under such circumstances they would be crass optimists or mugs to go along with management's plans.

The third example simply confirms the decision we, and the Norwegian employers and trade union leaders made in 1962 - you can forget about democratizing work if matters of gross 'industrial injustice' are still unresolved.

Fred Emery, 25 October 1989

**PARTICIPATIVE DESIGN: Work and Community Life
1974, 1975, 1985**

Fred and Merrelyn Emery

Part 1. Job Satisfaction and Democratization

Bureaucratic structures and the systems of management associated with them have been unable to systematically provide for the personal growth and development of their members, in particular the large numbers at the base of the pyramid, who may even be downgraded by their work experiences (eg, assembly line workers, shorthand typists in typing pools). The traditional conception of management's task has been inhibitive of such growth. Representative remedies such as joint councils and workers directors have also failed.[1]

'The philosophy of management by direction and control is inadequate to motivate because the human needs on which this approach relies are today unimportant motivators of behaviour. Direction and control are essentially useless in motivating people whose important needs are social and egoistic... People, deprived of opportunities to satisfy at work the needs which are now important to them behave exactly as we might predict - with indolence, passivity, resistance to change, lack of responsibility, willingness to follow the demagogue, unreasonable demands for economic benefits.'[2]

Cumulative investigations in Europe, Scandinavia, Australia, North America and India have enabled social scientists to identify a number of important determinants of job satisfaction, located both in the dynamics of person-task relations and in the social climate of the work situation. These factors have been called 'psychological job requirements'.

It is clear that particularly the first three of these requirements which refer to the content of the job need to be optimal for any given individual and flexible to meet variations in individual need; eg, from day to day, or morning to afternoon.

- . Adequate elbow room. The sense that they are their own bosses and that except in exceptional circumstances they do not have some boss breathing down their necks. Not too much elbow room that they just don't know what to do next.
- . Chances of learning on the job and going on learning. We accept that such learning is possible only when people are able to set goals that are reasonable challenges for them and get a feedback of results in time for them to correct their behaviour.

An optimal level of variety; ie, they can vary the work so as to avoid boredom and fatigue and so as to gain the best advantages from settling into a satisfying rhythm of work.

Conditions where they can and do get help and respect from their work mates. Avoiding conditions where it is in no one's interest to lift a finger to help another: where people are pitted against each other so that 'one person's gain is another's loss': where the group interest denies the individual's capabilities or inabilities (as in the bull gang system that used to characterize Australian dock work and is apparently still prevalent in New Zealand's meat freezing works).

A sense of one's own work meaningfully contributing to social welfare. That is, not something that could as well be done by a trained monkey or an industrial robot machine. Or something that the society could probably be better served by not having it done or at least not having it done so shoddily. Meaningfulness includes both the worth and quality of a product, and having a perception of the whole product. Many jobs which are meaningful in the first sense have been downgraded because individuals see only such a small part of the final product that its meaning is denied them.

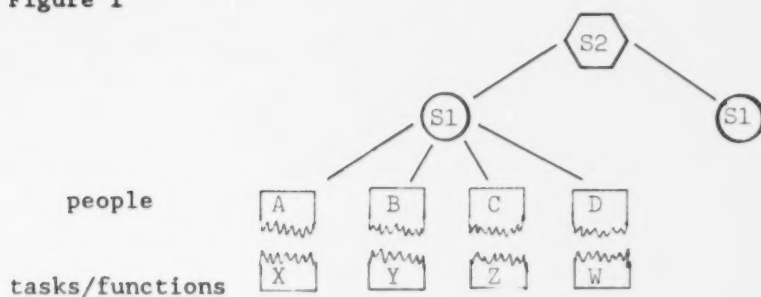
A desirable future. Put simply, not a dead-end job; hopefully one that will continue to allow personal growth.

We have assumed, from our past experience, that these psychological requirements **cannot** be much better met by simply fiddling with individual job specifications; eg, job enlargement, rest pauses, supervisory contacts. If the nature of the work allows room for improvement this will be best achieved by locating responsibility, for control over effort and quality of personal work and for interpersonal coordination, with the people who are actually doing the job.

We think that the reasons for the proven superiority of the 'group solution' have emerged, rather painfully, over the past forty five years of laboratory and field experiments. The differences in the structural relations of people, tasks and supervisors gives us our first and most important clues; eg, Figures 1 and 2.

Figure 1 pretty precisely defines what has become the dominant bureaucratic form of organization that has been enthusiastically installed by production engineers and O & M experts alike. It is scientific management. Control and coordination, the two dimensions of human organization, are vested in the supervisor. S/he controls the subordinates by specifying what the individuals A, B, C, etc. will do vis-a-vis the task allotted to them, X, Y, Z, etc. Coordination is the

Figure 1



supervisor's preserve. Achievement of the section's task will almost certainly be related to the adequacy of coordination because of either interdependence between the tasks themselves (as exemplified in process industries) or variations in optional work loads between individuals (as exemplified in typing pools). The short term fluctuations in the section's performance are not easy to manage as the supervisor increasingly loses the right to hire and fire. Coordination is the variable the supervisor can manipulate and hence manipulate the image his or her supervisor has of them. This is not without its difficulties. Tight job specifications to give supervisors greater control on subordinates can also be used by them, particularly if they are unionized, to cramp the supervisor's style when s/he seeks to use idle time to help out on other jobs. Amongst employees, so organized there will be an almost universal tendency to develop an 'informal system' to turn the requirements of coordination to their advantage; eg, 1. 'Dargs' and other restrictive but informal production norms to reduce the productive potential with which the supervisor might do some shuffling; 2. Cliques whereby subgroups in the section ease their jobs by collaring for themselves the productive potential in coordination. Because the purposes of these cliques are personal they tend to organize themselves around bases for common trust; eg, religion, race, old school. They do not tend to organize themselves around the interdependencies of task and personal work capabilities that particularly effect the supervisor's concern, namely the section's productive capability.

We can easily sum up this description. The building brick for this type of organization is the one person-shift unit. Controls might be sloppy or tight but the principle is the same. The organizational module is the supervisor and his or her section; with responsibility for co-ordination being jealously defended as the prerogative of the supervisor. The module and its basic building brick can be indefinitely repeated upwards to the managing director and the directly reporting functional managers. It is the organizational design that has been used by the western world to go into large scale production. It happens to be the organizational form that put up the pyramids and China's Great Wall.

This rather wordy description of Figure 1 might help to show why redefinition of individual jobs has no real chance of changing things, is so much favoured by some managements and arouses suspicions of some unions. Enrichment of individual jobs usually entails switching bits of task X from A to B etc. This can easily generate into 'robbing Peter to pay Paul'. Very difficult if Peter happens to be in a craft union.

Such manipulation leaves the power structure and communication pattern basically unchanged. If A, confronted with new circumstances, believes that they need some help from B or that they are picking up some information of potential value to B the communication is still up to the supervisor and, as s/he sees fit, down to the subordinates. The communication which is needed to reflect and cope with changing task requirements is being channelled through a filter/amplifier system that is labelled on one side 'us' and the other side 'them'. The goals of the supervisor are those that concern the section's overall performance and explicitly no business of his or her subordinates, A B C. The subordinates' goals concern the performance standards set for sub-tasks X, Y, Z, etc. This means that communications are going to be amplified and attenuated in the same task related channel, by different criteria. The 'us's' will amplify what makes them look good vis-a-vis their own task performance or relative to their 'colleagues'. They will hear as little of the downward communication as suits them and they can get away with. The supervisor will be anxious to hear and remember what will sound good to his or her supervisor, including excuses for malperformance.

The power structure is similarly unchanged. Someone once said that 'What Caesar can do, Caesar can undo'. The redefining of individual job specifications for 'job enrichment' is very much within the traditional managerial prerogatives. Come the usual crisis and demands to tighten up, the same managerial prerogatives enable the individual jobs to be screwed back to tight, specialized, supervisable performances that will yield a guaranteeable performance level. The variation seems little different to the fluctuations between sloppy and tight rates in the individual incentive schemes we see in light engineering works. Little wonder that the engineering unions have been foremost in expressing scepticism about 'job enrichment'.

The **alternative organizational module** (Figure 2) has markedly different potentials. The first and obvious feature is that it is not restricted to just redistributing jobs X, Y, Z, etc between A, B, C, etc. It allows for A, B, C, etc to share and allocate amongst themselves the requirements for control and coordination of their task related activities. Thus it is not just the sum of the individual tasks X, Y, Z, etc that they take responsibility for. It is also all the task inter-

Figure 2



dependencies (interactions XY, XZ, YZ, XYZ...). Also, and of critical importance in the kind of jobs produced by the widespread adoption of the bureaucratic model, is the fact that the group must share the tasks of monitoring and controlling the contributions of its own members, and organizing their mutual support to cope with individual and task variations. In this module individual 'job enrichment' has a qualitatively different scope. As a desirable flow-on it provides the individual with a human scale of organization (a work 'home', 'family' or territory) whereby people feel they fit into the corporation, no matter how large that may be. It provides the individual with an on-the-job defensive and offensive group of colleagues such that his/her work life will not easily be degraded at the whim of a new, go-getting manager, or because the corporation has run into yet another of its budgetary crises. Communication and power within these groups take on markedly different characteristics to what we find in bureaucratic organization [3] which is why communication and power cannot be taken as basic variables of organizational design (they are universally present attributes of organization, but they do not tell us much of relevance about what is communicated, what is commanded).

Changes in organizational design affect the nature of communication and power but the reverse does not hold. Provided we have a group and not just a collection of individuals or a mob, and that the group has accepted responsibility for a group task, then it will seek to make its life easier (or more productive for their ends) by: (a) communicating quickly, directly and openly the needs for coordination arising from task or individual variability; (b) by allocating tasks and other rewards and punishments to control what they consider to be a fair contribution by members.

Such groups can get a sense of an over riding group responsibility only if they have at least four members (with three it is too often a matter of just interpersonal relations - two against one). If the groups are kept to eight or under they are less prone to 'group emotional' (mob) behaviour. Larger groups can be very effective if they share a deep rooted work culture and the parts of the group task are highly interdependent (eg, the eighteen man Australian Rules team of footballers).

These groups can be only partly autonomous, not fully autonomous as they often were in cottage industry. They are working with materials

and equipment for which the company is responsible for getting an adequate return. They are working in conditions where the company, not they, are responsible for observing the mass of social legislation laid down for basic pay rates, safety, product quality, etc.

Many circumstances indicate that varying degrees of autonomy will be agreed to for different working groups. At the lowest levels of autonomy the groups may simply have the right to decide on working methods and allocation of work between themselves. At a somewhat higher level they may control some of the conditions from which they start; eg, membership of their groups, equipment and tools, maintenance, support, quality levels for acceptance of inputs. At an even higher level they may even be involved in redefinition of work goals. Proceeding to a higher level of autonomy at one and the same time involves the group more deeply in the longer range concerns of the company (eg, product development, selection, training) and increases the autonomy that is possible at lower levels. Thus, regarding the latter, involvement in product specification can be associated with innovations in tooling up, staffing, training and also in work practices. Involvement in starting conditions may have a considerable effect on the methods of work that they can choose.

People cannot be expected to accept responsibility for production, as a group, unless a number of conditions are met. The psychological requirements that individual workers have of their jobs are just about equally relevant for a face-to-face group of workers. They must know that they can aim at targets that are explicit, realistic and challenging to them; and they must have a feed back of group performance.

In setting and agreeing targets care must be taken to avoid lopsided simple minded targets that might encourage shoddy workmanship, unsafe practices or a 'bullgang' atmosphere where group members come under pressure to go for target levels that are only really suitable for the young, the strong and the greedy.

They must feel that the membership of their group is to some degree under their control. They must furthermore feel that how their leadership is organized is their business. Naturally, group integration will be low unless there is sufficient multiskilling to allow flexible allocation of work within the group, to both individuals and subgroups. How they allocate the work should be their responsibility, with explicitly agreed limitations to protect plant, safety, etc.

It will be noted that these steps toward setting up self managing work groups requires more explication of goals, methods and responsibilities than is usual. The commonsense and good judgement of a supervisor is no longer enough. If these things are not worked out there is a danger of drifting into a *laissez-faire* atmosphere.

A modified form. The alternative organization discussed above implies that a fair degree of multiskilling is possible and hence that people can make real decisions about the switching of jobs. However, there are important areas of work where multiskilling is not feasible. In research and development projects one may have to have such diverse skills as mathematical statisticians, chemists, economists. Each has their own special contribution to make and while the overall success of the project depends on the effective coordination of their activities, one cannot expect to achieve this along the path of each person becoming expert in all of the required disciplines. In the management of enterprises we confront the same dilemma.

Beneath the managing director are usually functional managers for such things as production, finance, marketing, personnel and administration, R & D. They are typically chosen for their expertise and it is not expected that the production manager will be as good at financial matters as the finance manager. They in turn expect to be judged and rewarded for their expertise in their function.

Organized bureaucratically these work sections show the same shortcomings as are described above. Concern about this has been manifested in the rash of efforts at 'matrix' and 'project' organizations for R & D work and 'team building' for management. A lot of these efforts have been described as creating pockets within persisting bureaucratic structures where this is an 'open culture', 'trust' and 'understanding'.

In many ways they seem like laissez-faire policies to let special kinds of people 'do their own thing in their own way'.

A more prosaic but effective solution is along the lines of the principle discussed in connection with multiskilled self managing groups: **locating responsibility for coordination clearly and firmly with those whose efforts require coordination if the common objectives are to be achieved.**

The change we are proposing can be represented diagrammatically as follows, using the management example:

Diagram A

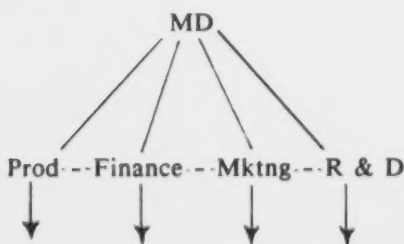
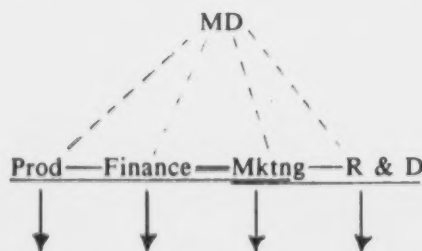


Diagram B



In the normal bureaucratic state (diagram A) the functional managers will be primarily jockeying for influence with the MD so that s/he comes down in favour of their functional policies. This does not exclude temporary informal alliances between some functional managers to better ward off the threats of others. All rather suggestive of palace politics.

In the team concept (diagram B) the functional manager is judged and rewarded, or punished, as much for his or her effective coordination as for the ability to propose and implement policies in their division of the organization. If an unresolved conflict arises between the managers, the MD must sort out whether it is because one or more of them is incapable or unwilling to find a suitable compromise or whether the framework of policy that s/he is responsible for creating is inadequate. In the first case the MD must decide on some re-education or redeployment; in the second, s/he must move from the normal operating mode, where they are relatively free from ongoing intraorganizational commitments, into a policy forming mode. The MD and managers need remain in the 'policy mode' only long enough to create an adequate framework of operating policies (I have been inclined in the past to write off the style adopted in the 'policy mode' as rather irrelevant; MDs form a very small proportion of the work force! This now seems an unfair reflection of my experience. Admittedly, a relevant and acceptable body of overall policy must come into being, no matter how. However, MDs who deny their managers' involvement in formulating the principles they must use to coordinate their efforts must be dangerously conceited or charismatic).

Respecifying job responsibilities in line with diagram B would seem to be a simple matter. In fact, it seems from my experience, that only time and a few exemplary experiences are needed before the changed nature of managerial (or project team) responsibilities is grasped. More difficult is the transition backward and forward from the 'policy forming mode'. If this is too frequent the 'time span of responsibility' of managers or researchers can be so reduced that they are, once again, just cogs. If it is to be as infrequent as possible and yet adequately reflect the rate of change in the organization's environment, objectives and resources then the team will have to adopt means of exploration and search that are not now commonly used.

A final point should be made about this modified design. This is with regard to the emergence of leadership (a problem that is not quite so pressing at the occupational level where multiskilling is feasible; at least not until it is realized that the royal road to management is not necessarily through prior tertiary education). The bureaucratic system (diagram A) makes it very difficult to identify a potential leader. Is the next MD or project leader to be a person who was just so good (or lucky) at their specialist contribution that he or she put their colleagues in the shade? Is such a person the one best fitted to ensure

the overall objective? It is difficult to know in that type of organization where a person is paid for putting their best effort into their speciality.

In a genuine team structure (diagram B) it is relatively easier to see who is best capable of grasping the overall structure within which they better make their specialist contribution. It may be, for example, the production manager who recognizes that s/he must accept a suboptimal solution to the length of the production runs if marketing requires a greater range of products; to accept a suboptimal level of stocks with all the difficulties it makes for managing production if the company needs a higher level of liquidity. It is the ability to work in this way that would indicate a potential for overall leadership.

If groups of people are to be expected to take responsibilities or production it is highly desirable that they feel that they have taken real part in designing what they are going to do. For many years, particularly in Norway, we felt that this involvement needed only their right to choice in matters of detail, a genuine democratic vote by them whether to go into the new scheme of working and real guarantees about their right to opt out, individually and collectively. We have learnt that this creates an unhealthy reliance on outside experts and hinders the emergence of a self sustaining learning process in the groups. In the last few years we have found that the most fruitful way to proceed is to involve workers and management in two to three day 'participative design seminars'. The aims of the design are spelt out to the participants as in the above statement of psychological requirements and they then proceed to: (a) analyze how the job is now done; (b) assess how far this falls short of meeting the human requirements; (c) redesign for a better way of doing the job (if such is felt to be needed); and (d) work out how the new design could be implemented.

Part 2. Participative Design Workshops: A description

For nearly 40 years now social scientists have been experimenting with methods of democratizing work.[4] These notes are merely descriptive of strategies used in job design/redesign programmes for democratization.

The basic strategy and its underlying assumption described here do however, depart radically from those employed in the UK and Norway, etc, up until 1973. The reasons for these basic changes are partially explained in the Postscript to 'Democratization of the Work Place: historical review of studies'.[5] The role played by social scientists in these seminars today is much more congruent with the philosophy and ideals of democracy than was the earlier role. This is brought out most clearly by the ways in which analysis is handled, the involvement of relevant workers in the process itself and the resource role of an

external agent. The learning environment created in these seminars is therefore itself a working example of the second model of organizational structure.

Within the process of participative design there are problems and questions common to all technologies. Only the most common and fundamental of these are included here. Although the design seminars themselves are often not the appropriate time for resolution of some issues which arise from structurally innovative designs, an awareness of latent negotiation and action is usually developed.

The basic assumption underlying the methods described here is that the most adequate and effective designs come from those whose jobs are under review. It is only from people pooling their various and usually fragmented, but always detailed, knowledge that a comprehensive and stable design can come. More than that, it is only when the people involved work out their own designs that the necessary motivation, responsibility and commitment to effective implementation is present. The difficulties which are almost inevitably met in the initial phases of implementation may be found to be overwhelming if designs are imposed from above or by external agencies such as social scientists. The people must own[6] their section of the organization.

As will become obvious from the following discussions the philosophy of participation as spelt out in practical detail is considered appropriate not only to industrial and white collar/clerical work sites but also to communities and educational institutions.[7]

The time allotted to these seminars is usually one and a half to three days. Programming after the first three or so sessions should remain open to capitalize on group tempo, need for major issues to be discussed in plenary session, etc.

Selection of Persons to be involved in design

Generally the most important criterion to be observed is the size of the design group.

Given a small discrete or well defined section or unit, say 4-10 persons, it is best that everybody in that unit work together on the design. The size of the group will be increased of course by the desirable, if not necessary, inclusion of union representatives, first line supervisors, other management personnel, etc. The size of the group may be increased in this situation if the people already have established close social or work relationships, or if it is a well delineated section - the personnel section, Department of Overseas Trade with 15 persons functioned well as a total design group.

Given a large unit such as the Yearling Hall at SAMCOR (South Australian Meat Corporation) it is necessary to ask the personnel of this unit to select an appropriate number of its members to do the design. Guidelines for this choice should be outlined in terms of the principles of the 'deep slice' that is a slice through the hierarchy of the organization from shop floor to relevant management functions.

The 'deep slice' was used as a strategic technique for the first time in Australia in 1971. It was tried as a response to a receptive and anti-expert oriented climate where the demand for visible and self generating change was strong. This climate and awareness of the need for change with its attendant sense of urgency would appear to be another of the factors leading to this further democratization of seminar design.

In the case of SAMCOR the Yearling Hall selected as its deep slice, two labourers, two slaughterers, the rover and the floater (first line supervisors for slaughterers and labourers respectively) the boardwalker (superintendent of the Yearling Hall), and the fitter. Present also for part of the time were the Secretary of the Meat Workers Union, the General Manager of SAMCOR and the Worker Director of the Board. One each of the labourers and slaughterers were union delegates on the floor.

It is obviously not a feasible alternative to have separate groups working on part solutions or aspects of a design.

One special contingency needs to be mentioned. It has been found to be highly disruptive of groups in the design process if latecomers are permitted to join without the experience of the initial briefing. This briefing must be replicated for latecomers if they are later to work constructively on the design.

Note on Participation of Union and Foremen

The same comments on ownership and understanding of design criteria and their implications apply to both union representative and foreman/supervisor.

In the case of unions it is necessary that they are present to safeguard existing awards and agreements concerning all aspects of the job;

understand the role of demarcations in multiskilled group functions and then to participate in possible future discussions as to ways of rationalizing both demarcations and skill barriers;

see democratization as a further benefit to the shop floor or operator level and ways in which unions can enlarge their

sphere of negotiation with management to include this further benefit.

For foremen or first line supervisors, participation is essential. They will often be the most experienced member of the design team and have the experience therefore, to help:

- . identify the extent and the boundaries of the working group;
- . realize training requirements for members of the group;
- . spell out their role either (a) as the most experienced or trainer member of the group or (b) as the boundary rider of the group or groups with special responsibility for planning input/output schedules or intergroup links.

Participation of persons at this level in solving questions of this nature will help to ensure that the relinquishment of the previous functions of control and coordination will be smooth and replaced by more effective relationships encouraged by mutual understanding. The mutual understanding as a process has already begun through the life of the design team as it works as a group towards the common goal of 'more human jobs for all'.

Participation of other managers

It is assumed that the sanction of and approval and understanding of consequences by top management have been assured before the event of the seminar.

It is similarly assumed that management has a set of policies or organizational guidelines which can be used by design groups in the joint setting of goals.

This understanding in particular will be furthered if management can participate in the design process itself, at beginning and end.

Any remaining suspicions of union and operators will be further alleviated if management in person can at the time of the seminar reiterate either by word or deed its encouragement of the purposes of the design team. Management should not be present throughout the process except perhaps as observer but they should be encouraged to come in at the beginning to state organizational purposes.

Management better appreciate the organizational implications concerning, for example, training requirements and possible costs thereof, manpower situation, recruitment strategies, etc if they can drop in towards the end to hear the team sum up their design efforts.

One important question for management is the level of staffing. Experience has shown that a certain degree of understaffing creates the tension in a system necessary to hold task oriented goals at premium. For Indian managers this created a conflict with the accepted policy of employing as many as possible to perform a particular task. This conflict involved much more lengthy discussion of the relationships between understaffing, task and production, and long term planning than in economies such as the Australian. It is a good example therefore of the necessity of all parties to explore the principles of design in their own unique circumstances. In no way can this method of collaboration be used as a closed or package product. External agents need to be sensitive and responsive to immediate local relevant features of plant, technology, social structures, etc.

The Outside Facilitator or Resource Person

In these workshops it is not necessary that the outsiders are experts in the field of work that is being designed. Their job is to help the assembled workers and management pool their knowledge and use their expertise, wisdom and brains. They are the managers of the learning process and environment. This does entail enough familiarity with the work in question to follow the discussions and sense when bottlenecks are emerging, red herrings being pursued or when pseudo obstacles or conflicts are being generated (it is remarkable to find in any workplace how many things are technically impossible; things that have been done in 'the place next door' for years). But this role is a long way from that of the expert who presents the best solutions.

An outsider is relevant simply as **process management and external resource**. A manager can umpire, suggest, criticise. As an external resource they can help broaden the workshop's range of experience and deepen their analysis with social scientific concepts.

Briefly, managerial responsibilities fall into the areas of:

- . Introduction;
- . Method of analysis;
- . Process and content resource for group;
- . Implementation.

Introduction:

The basic content of the introduction is contained in Part 1. Presentation of this content appears to be most effective when it is simple, brief and visual. It is infrequent that clarification of basis concepts is requested. They seem to be readily grasped regardless of the educational level of the participants.

Method of Analysis:

The following method has been found to have two major advantages. It is best introduced immediately after questions about basic concepts and before the group begins to work autonomously on the task of design or redesign.

The design team is asked firstly to draw up a simple table such as Figure 1. On this they are asked to rate every job or skill grouping required by the section task as it stands at the moment.

Figure 1 **Example of First Stage Analysis**

Class of Job or Skill Grouping

Psychological Criteria	Typists	Filing Clerks	Receptionists	Accountant etc.
Decision making	2	1	7	9
Variety Optimal	4	2	5	6
Learning	2	1	6	8
Mutual Support and Respect	3	3	0	0
Meaningfulness	3	1	5	7
Desirable Future	4	2	3	9

The team may prefer if time is short to estimate the criteria for each job on a three point scale (-, 0, +) indicating insufficient, adequate, ample of each criteria. However, even if time is not a priority the team should be reminded that the ratings from 0-10 are only to give estimated relativities for quality of job between section colleagues and that the more important task of redesign will be more time consuming.

The advantages of this first analysis are firstly that any misconceptions of the nature of criteria are hammered out by the group and a common and well founded understanding is established. Secondly, this first task is usually sufficient for members of the team to become acquainted with each other if they have not worked together closely on site, and to work through first stages of group formation. This is usually found to be necessary sooner or later because of the fragmentation that has taken place (a cohesive work group is formed fairly fast under these circumstances where involvement with such a personally important task as the organization of one's own job is very high).

Once the first stage analysis is complete to the group's satisfaction they should begin to look at the work process flows through the section or

unit to gain an appreciation of degrees of interdependencies and the length/size of total task leading to final product(s).

Within this analysis process, stages should be assessed in terms of training or skilling requirements, and any natural breaks in the process or flow should be noted in case the section should need to be divided into more than one self managing group.

The group often find it useful to set up a skilling table such as Figure 2 to help assess future training needs if multiskilling is not adequate at the moment to allow self management.

Figure 2. Multi-skilling table

	Skills required for group task			
	J	K	L	N
Mary	x		x	
Jim		x		
John	x			x
Alice	x			
Joe	x	x	x	x
Jenny		x	x	

In the example given in Figure 2 it is obvious that Alice and Jenny would be unable to replace any others in an emergency, or rotate to gain variety in job. Also skill K can only be handled by two individuals which may inhibit flexible staffing. Although it is rarely essential that there may be complete multiskilling in a group there should be sufficient flexibility built into the group to cope with absentees and the extremes of fluctuation in work load at any stage of the work flow.

After the group has completed a design for the unit it is often useful to return to the first stage of the analysis and check that no particular jobs have been left out of consideration in the new structure.

Resource for Group:

It is essential that the facilitator act only as a resource after the introductory briefing. This is best done by leaving the group to work alone. He or she may be close at hand in the case of no

consensus of meaning within the group on a particular issue and they may return to work with the group after its initial settling and formation stages. Or the process managers may in fact not be needed until the group is ready to discuss its interim or final design. Checking progress however, is always useful.

As well as ensuring the formation of a work group this behaviour of the facilitator has indirect learning for the group. Whether or not this is made explicit, the members of the design team now have at least one experience of being a self managing group who has successfully worked towards its task goal. It is useful to point this out to members who become resistant to the idea of groups functioning without constant supervision.

It is rarely that the resource person is required to deal directly with technological queries. The resource person may have to enquire on their own initiative at times into the technology if for some reason work is blocked or analysis shows results which are clearly unrealistic. Often it is useful to be able to cite examples of the same or similar technologies.

There are other times that a resource may need to intervene. One group of managers and unionists interpreted mutual support as a craftsman having an unskilled offsider to fetch and carry tools, etc for him. Such an example is however unusual. More usual is the case where a particularly happy set of interpersonal relations is accepted as a substitute for the democratic structure.

The design team may often on their first attempt bring up a design which is incomplete or an example of Herzbergian individual job enrichment rather than democratization. In the case of an incomplete design it is worthwhile questioning to determine whether it is a simple case of incompleteness or due to such factors as union demarcations.

If a group returns a typical enrichment design the implications are often quickly cleared by reverting to explanation of these via the usual structural modules. There is a case, however, where blocks to democratization may be very real. This involves a group's inability to deal with the new role of first line supervisors. If a significant segment of a plant or office, etc, is to be redesigned it is estimated that usually one third of existing supervision positions will be necessary after democratization. As guarantees of no retrenchment are often demanded the resettlement of this remaining two thirds of existing supervisors requires a searching and creative problem solving process. In the time available for discussion of such matters it is often the only way to extract agreements that after

retirement of present individuals no further replacement will occur. The groups then may be granted their real decision making powers in the hope that relations between the groups and their short term supervisors will be sorted out in the process of implementation.

Implementation:

Discussion of designs at the time of finalizing designs. The following issues commonly arise. They are not discussed in any order of priority.

Sharing the increased productivity. After the initial protected period of settling down into a new work organization some increase in productivity usually results. It is the joint responsibility of managements and unions to anticipate this increase and prepare to negotiate new agreements for sharing when the new rate of productivity becomes stable. It is one of the responsibilities of management that can be made clear at the start. Regular reviews of flat awards have been found preferable in incentive bonus payments, even on a group payment basis. Where bonuses have been established as policy it is still preferable to institute regular renegotiation and maintain bonuses only at a nominal or symbolic level. Individual incentives are almost impossible to allocate within the framework of self managing groups and group bonuses become difficult when there are strong interdependencies between the tasks of groups in a complex plant.

Training costs may increase significantly in some technologies. This is a separate but related issue to that of revision of awards to payment for skills, where this is not already in effect. Members of multiskilled groups are paid to the highest level of skill they hold although this skill may not be in constant use. It is to the advantage of management to use this scheme as it helps to ensure that the benefits of multiskilling will be retained. Deskilling has been one of the results of moves towards Scientific Management. Democratized groups work effectively given traditional schemes of pay and classification gradings. However, it appears to be only a matter of time before groups begin negotiations for more appropriate forms. These issues have been found not to present intractable problems.

Composition of the group. A group may fail to cohere or reach its goals if it is lacking initially in sufficient experienced members to provide leadership. As well as experience with the technology there needs to be some members with the maturity to guide the group to effective autonomy. This often means keeping the group together to its appointed task in the face of distractions caused by short term individual needs.

Selection of group members. Established working groups must be allowed some say in the composition of the group. This can be arranged in terms of a trial period for new members after choice from a short list prepared by management.

Incompatibility of individuals with groups is often simply resolved by the individual choosing to look elsewhere for a more appropriate work culture.

Loners can usually be accommodated by groups by designing around them. The special case of the loner who has difficulty in adapting to democratic ways after years of entrenched status differentiations often needs the consultation of the group and management. In extreme examples of sabotage of the group's efforts, management may need to consider horizontal displacement of the individual concerned, or other solutions.

Goal setting. It is essential that the task goals set jointly by management and the groups be compounded of both task (quantity and quality) and human components. Where the goals set are only targets of quantity the opportunity is opened of subversion of the group into a 'gang'. The incomplete nature of the goal leads directly to intergroup competition, neglect of interdependence; ie, of group tasks and abuse of individual members - their needs and unique contributions.

Leaders and spokespeople. It is unusual for a well functioning group to show a constant pattern of leadership. In the true sense of leaderless group - a group of leaders - the leadership function will move from person to person as the progression of the task demands differing experiences and skills. However, it has often been found useful for the group to nominate a spokesperson to operate intermittently at the boundaries of the group. But this is not necessarily a leadership function except in the minor sense that communications through the spokesperson are effective to the extent that they are accurate and representative.

Degrees of Self Management. It may sometimes happen that while goal setting has been a joint task of groups and management and the contract of the group is for self management in terms of its function within the total framework of company policy, industrial agreement, etc a highly effective and successful group may gradually move to total autonomy. The basis for this move is the over confidence of the group and its tight supporting infrastructure. The results are first noticed usually in a growing disregard for established safety procedures. It is the responsibility of the linkperson or boundary rider to reaffirm the initially agreed limits to group function and

responsibility, in consultation with other levels of management if necessary.

Training for Linkpeople/Boundary Riders. When the initial problems relating to either relocation, retirement of first line supervisors have been solved, the question remains whether those chosen as links or liaison people have the necessary experience or training to carry out the new role. This new role encompassing as it does oversight of intergroup relations and the flow of inputs/outputs, requires capacities which are strictly managerial rather than supervisory. This qualitative difference often makes necessary retraining as well as re-orientation of outlook. Management should be prepared to face costs for training in these positions as well as those of multiskilling operatives.

In Summary it should be restated that these are only a selection of the issues that arise in implementing change from bureaucracy to democracy. The discussion given them is drawn from the experiences of those who have worked towards successful implementation but the reader is reminded that 'credulous imitation' is infrequently a formula for success. Effective problem solving is more likely to be achieved by those involved in their own unique variant of circumstances, history and technology.

Notes

- 1 Form and Content in Industrial Democracy, F E Emery and Einar Thorsrud, 1964, Tavistock, London.
- 2 D McGregor, 'The Human Side of Enterprise', in V Vroom and L Deci (eds.) Management and Motivation, London, Penguin Press, 1970, p.314.
- 3 For an elaboration of the nature of communication in bureaucratic and democratic structures see Part III of A Choice of Futures - to Enlighten or Inform, Fred and Merrelyn Emery, Martinus Nijhoff, 1976, Leiden.
- 4 For a brief review of the earliest attempts see Paul Hill, 1971, Towards a New Philosophy of Management, Chapter 3, Cower Press Limited.

For a discussion of democratization as an active adaptive response to change, see Fred Emery, 1977, Futures We're In, Martinus Nijhoff, Leiden.

For a comprehensive review of the first four Norwegian experiments see Democracy at Work, Fred Emery and Einar Thorsrud, Martinus Nijhoff.

- 5 In Search, 1973, 4.7 pp.284-290.
- 6 'own' in the psychological sense.
- 7 Democracy in Learning, Trevor Williams, 1975, Centre for Continuing Education, Australian National University, Canberra. See also Learning to Manage our Futures, T A Williams, 1982, John Wiley & Sons.

Other References

Other participative forms and variations on the theme of Participative Design are to be found in Searching, Merrelyn Emery, 1982, Centre for Continuing Education, Australian National University, Canberra.

FURTHER LEARNINGS ABOUT PARTICIPATIVE DESIGN

Merrelyn Emery, 1988

Diversity and Flexibility

Since the advent of the little publication Participative Design, countless participative design (PD) workshops have been conducted in many highly diverse settings and ways. At one end of the spectrum is the Development of Human Resources Workshop which publicly recruited organizations prepared to send teams into a formal learning environment. Then there are the small single organizations learning to redesign themselves in their own, often very informal circumstances and in their own time. Almost every contingency from multi-mirror group structures to different sections of an organization working together to small groups working alone appears to have been required and accommodated. The PD workshop is a highly flexible form.

Nor should it be assumed that PD is appropriate only to places of paid employment. It is as applicable to a group of kids wanting to set up their own local recreational centre as it is to a voluntary organization (Emery M, 1982). Whenever people congregate to plan or act there is also a question of how they can best organize themselves to achieve their goals.

While it is highly adaptable, there are some elements which must be present if it is to be a PD workshop. Basically it is an environment for conceptual and experiential learning about democratic, learning organizations and for maximal learning it must include:

- . information about the genotypes of bureaucratic and democratic structure;
- . an experience of working within a democratic structure; and
- . experience of using the concepts and tools for its introduction and long term implementation

The first point probably requires some elaboration. Bureaucracy is a widely used word and to many means waging the paper war. When the concepts of democratic and bureaucratic structure are presented, it is important to make clear that these can be found in any sort of organization; that they lie behind the superficial (phenotypical) features such as impersonality, busyness or poor communication. PD differs from many of its competitors in that it addresses the genotypical core, the design or system principle; the disease if you like, rather than the symptoms. It is possible to spend a lot of time teaching people how to temporarily relieve the organizational aches and pains while the disease merrily metastasizes below the surface.

These elements are non-negotiable. Others are merely good or bad practice and may be judged according to whether they are used with insight as to what is required to bridge an impasse, bring a taboo out of the closet, rationalize a conflict, bolster or restore confidence and integrate new people or sections into the process. Until one gets into a redesign, it is almost impossible to foresee what sorts of forces will be operating and what sorts of resources will need to be brought to bear.

The DHR workshops in their final form were probably as efficient and effective a design to produce first stage learning and cover most contingencies at this stage as any. It was residential hot house, intensive learning and at any point, there was a choice of company, resource people, experience and advice to choose from. Significant and often extensive learning was done after hours. The final design was as follows:

DHR Workshops Final Design

Plenary. Final briefing, expectations Collection of data about changes in the extended social field
Small groups work on desirable and probable futures Connections are made to democratic structures
Plenary. Briefing on concepts and tools
Mirror Design Groups. Two disparate groups work together A + B analyse and redesign A's organization. C + D do the same for C's
Plenary presentation and discussion of designs
Reverse mirror groups. A + B redesign B's; C + D redesign D's
Plenary reports as above
Team groups and/or plenary. Next steps. Strategy

Stage 1 follows the normal first stage of the Search Conference (see part IV or Searching, 1982) and was added in the mid seventies when we realized a contextual factor would add to general understanding of the phenomenon of democratization itself. This was at the time when many were perceiving that the sixties and seventies marked a radical change in social climate, mood and value system (eg, Emery F, 1978). The workshop was begun late afternoon so that the context was part of a welcoming, introductory social atmosphere.

The briefing on concepts and tools was given next morning followed by the group redesign work. Total workshop duration was three and a half days and nights. It usually finished at lunch or mid afternoon on the third full day.

The use of mirror groups was invaluable we found and we designed for pairs with maximum heterogeneity. Too often when working on their own, natural work groups fail to question their assumptions or 'the way we have always done it'. They tend to be suffused with precedent, unwritten conventions and patterns of interpersonal behaviour, all of which may range from highly conscious to unconscious. Much of this is observed by the mirror group and they will question its necessity for the work, particularly when it is to be self managed. There were sometimes steamy moments as teams from private and public sectors debated procedures of control and coordination. The designs which resulted were much the stronger for this questioning and debate.

At the other end of the scale are those workshops which are strictly for the purpose of introducing individuals to the concepts and methods of PD. Sometimes they have been sent as part of an intelligence gathering tour of what is available if the organization decides to move into democratization.

The absolute minimum required in this class of event is a full briefing on the concepts and tools and some idea of how they are applied. However, as in most things the medium is the message and if there is no hands-on experience with the tools themselves, some go away with the idea that a PD workshop is still a top down exercise where the experts design a splendid new organizational form for the client. Every effort should be made, therefore, for an experiential component. Perhaps the element producing the most learning is the group completion of the six criteria as during this several new perceptions take place, even when the individuals involved are not members of the same organization. Foremost amongst these are the realizations that in bureaucracies, people are often unaware of what other people's jobs are and how they perceive them; that many perceptions of how other people feel about their jobs are stereotypes. Those lower in the pecking order often assume that those at higher levels appreciate their 'good jobs' while the managers see themselves having for example, too much variety and inadequate support.

Above all, the experiential component should be sufficient to convince the most sceptical that the designs will be those of the participants, not the managers of the workshop and not the other vested interests such as top management and union officials. For various reasons, there are often suspicions that the workshop or process managers are only the stooges or front line troops for other parties. And the participants will, therefore, be analysing carefully every statement and move to

uncover the professional's subtle manipulative tricks. If the genotypical democratic purpose is not clear, totally transparent and understood at this level there will be continuing scepticism that there will ever be a transfer of responsibility for coordination and control to the self managing groups.

It is critical, therefore, that the workshop manager(s) understand and observe the four principles for effective communication (see Part IV). Inexperienced managers or those wedded to the first paradigm can often convey through their style and/or handling of the process, the opposite of the messages conveyed through their spoken words. It is sometimes difficult for people to realize how subtle human communication really is, how sensitive people are to the many levels of message they receive and just how important it is to establish openness and conversation between peers. It is just as important in a PD workshop as it is in a Search Conference.

The PD workshop also lends itself as a component of a variety of novel events. Such a one was the series of workshops to explore RSI and preventative strategies. Clearly, work redesign was indicated as a major factor in any preventative strategy but would have been of little use had participants left the workshops without a good understanding of what was actually involved and how it related to the incidence and nature of RSI. This series of workshops gave a glimpse of a further potential for PD which so far hasn't been fully explored (Emery M, 1988).

In terms of the technicalities of design, it is necessary to stress the importance of the 'deep slice' or vertically integrated team. In a recent project at the Australian National University the industrial agreement governing the project specified a 'target group' which comprised only the lower levels of the hierarchy, specifically, the lower clerical, administrative and keyboard areas. While the intention was well meaning, it constrained the first phases and in the process, created and/or exaggerated problems way past the extent to which they are normally seen.

The first problem was that in most departments and sections there were not enough staff at these levels to provide any meaningful room to move to more optimal jobs, and certainly little if any opportunity to share the coordination and control of the sections. These functions rested primarily with the levels above who were excluded. In a highly specialized division such as Finance and Accounting, the separation of sections meant that some of the target group totally wasted their time in the early stages as they were the only target person and could not share across the internal boundaries. The problem apparently arose because the parties to the agreement did not understand the concept of PD, the central role of coordination and control, and had seen the problem as one of more equitable reclassification.

Another serious consequence was the paranoia which developed rapidly amongst the excluded. Although having been briefly briefed, they had no opportunity to experience the concepts and tools and, had therefore, no real idea of the collaborative sharing process which leads to a collectively satisfying design. As would be expected, those who normally have the most to lose in a flattening of the structure; ie, some within middle management, were most badly affected as were some departmental secretaries. These latter considered they held good jobs apart from the fact that they were inadequately rewarded and could see only that they would be robbed of their job's better features and deskilled into the bargain. Instead of all levels viewing it as an opportunity, the project became for many an extreme threat. Most of this was unnecessary.

While the centring of democratization within the industrial relations sphere has long been overdue, it is now a responsibility of those involved in drawing up agreements to educate themselves as to what is involved and what will really serve the best interests of their constituents. It would be appear that there is still a long way to go here and that unions themselves must accelerate the process of getting their act together. Another complication at ANU was the fact that different unions signed different agreements leading quite naturally to demarcations, which in turn created complications for any optimal cooperative and productive design.

It is probably worth stressing this point as it highlights the unpredictabilities which any such long term national process (1969-88 in Australia) throws up. Having long stressed the need for a single channel of representation, unions are now faced with the need to shape up to meet the responsibilities they have demanded and accepted. No longer are there the clear boundaries of the factory gate, the pay check, the heat or the noise. Nor is there the simple adversarial relation. All of this amounts to the need for a learning revolution for both unions and managements and while progress is being made, recent experiences show the gap which remains to be bridged.

Perhaps the reality we have seen in 1988 is the way it should happen but it seems silly that so many time consuming and self defeating mistakes are caused by a failure of both parties to consult with and take advice from those who have practical experience in the field. If this should sound like a whinge from one of the professionals, it probably is. But the whinge is not towards our greater glory but towards the most efficient and effective human solution.

On the simple issue of whether there is ever any place in a PD process for a lateral group, the answer is yes, but not as a basic design team. Occasionally in the implementation phase there is need for some detailed negotiation between one level, one particular classification

group etc, and others. Should this arise, the various separate parties should meet to clarify their position and/or plan their negotiating strategy. Sometimes a particular sub-group must meet to reassure or deal with one or more of its members. In this respect, the conventions do not differ from those established for any other party to the process. The only real issue is the constitution of the original design team, and this must be in the interests of the whole.

There are two main classes of traps in running PD workshops. The first is turning it or allowing it to degenerate into a personally or relationship oriented, 'communication' or sensitivity, 'group dynamics' event. This is a trap for those who believe that change will only occur if we can change ourselves or the way we behave in relation to certain others. This philosophy has enjoyed a long run, despite the absence of hard data to support it. PD is supported by a large body of evidence that shows if you change the hard realities of the relationships between people; eg, from the supervisor/supervised to peer or collegial relations, their communications and the general ways in which they treat each other change dramatically. 'Human nature' is not the static, unchanging entity that we have been led to believe.

Those change programs that have included this sort of exercise have generally been much longer and more expensive in terms of both resource and employee time and energy and many create their own problems during the course, some of which are sufficient to sink the project for once and for all. **Don't complicate a simple tool with extraneous purposes and processes.** They are dangerous in that people become suspicious as to what management or others are about and often resent what is being done to them in the name of better communication and democracy. Once there are conditions which make it in people's interests to communicate quickly and accurately, they will do so.

Half way houses or immature forms are also dangerous in that they can induce even deeper levels of cynicism. Such innovations as 'quality circles' in the western democracies have a poor track record in the longer term. They are only variations on the old suggestion box and show a similar life expectancy curve. If coordination and control are not, to some and an increasing extent, devolved to the people doing the work, any concept or process will fizzle out. This is the learning from history.

A genuine PD process will stress in all its aspects that it is **evolutionary**. Different groups will choose to start their learning about self management with varying levels of control. From their own chosen starting point, they will evolve at different rates showing irregularities that are analogous to the growth spurts seen in adolescence. These individual differences should be understood and respected by management, unions and workers in associated groups.

Individual versus Group Work

In this work as in all other it is necessary to practise what you preach. This means being open and democratic in all that you do and it also covers the ways in which you ask participants to work.

Several variations have been tried, for example, on filling in the matrix for the six criteria. Individuals have been given the six criteria on a sheet to fill in for themselves before the scores are shared and discussed with the group. Such an individualized approach is used for various reasons; a belief that some people may lack the confidence to put their scores up openly on the wall, will be influenced by others or be ashamed of their high or low scores. Once the individual has scored themselves, the scores are then discussed. On one occasion, the rule was that an individual did not have to share or discuss their scores if they chose not to.

As this is usually an early part of the process the message it conveys is important. The individualized approach tells participants that it is still OK to behave as in a bureaucratic structure; ie, work out your position before meeting the group, do not divulge your hand before getting the lay of the land and in the extreme case, claim your right to secrecy, or in other words, refuse to cooperate. These behaviours are the opposite of what is required for democratic working.

Compare the impression conveyed by the alternative practice of everyone sitting around the flip chart making various contributions of their own scores as they see them, their perceptions of other's scores, discussing and negotiating differences in perceptions, changing their scores if necessary and arriving collectively at a picture of how their workplace meets their needs, with an agreed set of relativities built into it. From the beginning the task is defined as a group task and one on which the group must work **as group** for a successful outcome; ie, one which will serve as an accurate basis for the design work which follows. This approach features sharing within a context of openness, cooperation towards joint purposes and a positive emotional tone engendered by 'we're all in it together'. The notable characteristics of this include goodwill and good humour with jokes and quick quips designed to break down status barriers and offer an easy entry for those with less confidence. It is fun and group working gets off on the right foot while a great deal of learning about their workplace, about other's jobs and how they see them and about democratic group working, is accomplished.

Sanction, Safeguards and Support

Another lesson from this accumulated experience is what happens when an attempt is made to turn back to bureaucracy an organization

which has functioned democratically. A similar set of phenomena are seen when promises to safeguard a democratic structure are broken or when the implementation of it is lacking in commitment or active sanction. There is a cluster of reactions which includes anger, disbelief and hurt, but the process of fighting to maintain what has been gained is conducted with dignity and respect until it becomes clear that the opposition must become implacable. When reasoning fails, the group assumption changes from work to fight/flight (Bion, 1959 and see Part IV) and in the current climate usually takes the form of passive resistance with a breakdown of commitment to the whole.

For some early sites the axe fell quickly and cleanly wielded by new managements brought in as a result of such moves as take-overs or retirements. It was simply announced that the change was to be reversed and 'normality' reinstated. What the boss giveth, the boss also taketh away. For these workers, particularly those in non unionized sites, there was no redress. The consequence of fighting the reversal was likely to be more serious in a time of rising unemployment than resuming bureaucratized work practices. As above, passive resistance and subtle sabotage may provide some short term satisfactions but these are debilitating and ultimately destructive options for most.

We have in our society plenty of people who would wittingly turn back the clock on democratic structures but more common is the failure to understand that the process of **implementation** requires leadership and active commitment from the beginning. Sanctioning from the top is accepted as a necessary precursor to a change but far too many bosses do not understand what is entailed and appear to really believe that if they issue a statement its substance will happen. Before democratization was centred in industrial relations and government policy, the top management of an individual firm or department was often the place where the buck stopped. Philosophy statements and policies were issued, workers were informed and change programs started. But when resistance to and outright sabotage of the changes began, there was no real action. Management's sanction did not include active intervention to prohibit or deal with the resistance and back the change and the process, therefore, was seen to be just another superficiality or attempt to solve problems without solving the problem.

There were so many of those examples in the seventies that for this reason alone, ID got a bad name, lumped in with OD (organizational development or sensitivity training) as another thing to stay away from. But some well organized groups, sections and individuals survived to tell the tale. Many that were successful kept public silence but transmitted in other ways the need for appropriate sanctioning, safeguards and monitoring under the umbrella of an agreement signed in the arbitration and conciliation court. Projects beginning today

within this framework are relatively free from the frustrations and disillusionment suffered in the past.

The Implications for Minorities

Most of the following is taken from various discussions of the consequences of democratization for women. This is no more than an historical accident as it is women who have been most organized and active in recent years to improve their status. There is little if any of it which does not apply in full measure to other minorities. The underlying philosophy of democratization is exactly the same as that of liberation or more narrowly EEO (equal employment opportunity) which it should be remembered covers Aborigines, ethnics and the handicapped as well as women.

What is this philosophy and what are its goals? Basically that people can function with and increase their dignity, expanding their range of choice in life and their personal resources to achieve human ends within an organizational environment which is designed by the people to fulfil their collective purposes and live with the consequences. The six psychological requirements are no more than a concrete statement of what is required for human dignity and well being. This includes a capacity to know of alternative ways of working and the environment in which they strive. If these are the aims of liberation and democratization, then there are serious questions to be asked of the means used to achieve them.

Unfortunately, many of the variations on both democratization and the implementation of EEO have and are mechanistic, giving lip service to the principles but denying them in the practice. This applies particularly when recipes or formulas are devised for giving a minorities a fair go but without the recipients having a say in the devising or the receipt. Mechanistic rules, for example, about the amount of time spent keyboarding were intended to prevent RSI and other injuries associated with keyboard and VDU work but as part of a process designed to increase control over one's work, they were counterproductive.

Many of the legislative and other formally imposed means for equality, equity etc have either been subverted by human ingenuity in the service of the status quo or have aroused backlashes even amongst those they were designed to help. But more seriously, the whole question of attitude and behavioural change appears to have been misconstrued. Pure consciousness raising does not appear to be the answer either. While there has been much of it and it has alerted people to possibilities other than their current circumstances, it has often been done without due regard for social environments and the means to change them. When there is a failure to turn humanitarian

dreams into reality the dominant elites are alerted to the lack of means and can escalate their oppression. Attitude change by no means guarantees action based change.

Somehow we have to begin the long process of removing, for example, men's fears and hatred of women and white fears and hatred of blacks. History, let alone herstory, shows that these are not going to be achieved simply through legislation or other such direct means. There is a role for legislation but these fundamental changes can only come through processes in which people of all shapes and shades meet and get to know each other as peers around common purposes. Shared coordination and control are essential elements in the required structures and processes. And shared coordination and control can only be genuinely and constructively exercised in environments which are carefully structured to ensure their development and continuity; ie, until it is taken for granted that democratic structures and environments are the normal form, that which meets basic human requirements.

As discussed above, there have been many attempts to adapt the basic PD workshop to better cater for groups perceived to be at some disadvantage such as low confidence, springing from their low status or membership in a deprived group. The problem with many of these attempts is that in their execution they only highlight and exacerbate the situation rather than taking a first constructive step towards redressing the balance. In a recent example, it was assumed that women would automatically be disadvantaged in working in a team setting with men. Therefore, the process must be one which secured an equal start. The changes made had the effect of both stratifying and individualizing it to the advantage of none (except the dedicated bureaucrats) while losing the opportunity of ensuring that right from the beginning, people would be learning that there was an alternative and simultaneously developing the qualities that had been stunted by their previous experiences.

Apart from the fact that the more one practises within a discriminatory structure under whatever guise, the more one reinforces that form of structure and its consequences, I wonder today about the wisdom of making the assumption that certain designated minorities will lack confidence, ability to speak up, etc. In the above example it became very clear that many of the 'oppressed' were not only willing to speak up for themselves but did so in no uncertain terms, showing deep insight and sophistication in both their analyses and presentations. They were probably disadvantaged by the changes designed to help them grow out of their lowly status.

Rather than generalize and label, why not try a process which in its very congruence and gentleness allows those who are coming from behind to catch up without being marked as special or different?

There has been and is a discriminatory structure built into our society. Nothing less than a wholehearted effort to create structures for learning about the roots of the alternative, how it works and how it feels, will overcome these sources of discrimination. Today, the propensity to form support and action groups of various kinds is one kind of welcome backup for democratization. Another is simply the intuitive realization based on years of exposure, however indirect, that there has to be something else. Planting a small seed is often sufficient to show that this intuition was correct.

And it should always be remembered that while the minorities who are at the bottom of the heap are sometimes badly damaged by living and working within bureaucratic structures, this form of organization damages **all** it touches, from the bottom to the top. Even if this was not the case, liberation or democratization of a minority will always fail in the long term if it is not the liberation or democratization of **all**. To paraphrase one of Mao Tse-Tung's most powerful sayings: If you are 90 per cent sure you want to liberate women, you will concentrate your effort on women. If you are 100 per cent sure that you want to liberate women, you will liberate both men and women.

It then becomes clearer why well intentioned strategies such as separating off a particularly at-risk target group such as clerical and keyboard staff will create problems and in many ways deny or devalue the change as one for all people. All are parts of the whole and derive their identities (and stereotypes) from the interdependencies of which the whole is composed. The creation of ingroups and outgroups by any line or purpose of demarcation will continue to haunt a process long after its short term ostensible benefits have been gained. I am using a 1988 example which shows that many, particularly within the women's movement, have not learnt this lesson. Unfortunately we live in times where some, particularly those new to the exercise of power, do not consider it necessary to consult history.

At stake are a set of values and ideals that bureaucratic structures cannot nurture and which separatist movements only further downgrade. If we do really value **people** and are working towards a sane, humane, ecological (SHE) future (Robertson, 1978) we must provide the settings in which all have the opportunity to gain confidence, not only in their own capabilities and powers but also in those of others. Those at the bottom of the heap obviously have more unlearning to do, of their negative self images and lack of confidence and most to gain. Becoming the new bosses, however, cannot achieve the second objective of bringing together those who were separate. No amount of power and role reversal can achieve its genuine antithesis which is power sharing.

What is commonly not recognized about democratization is the phenomenon of very strong transfer effects from the original

experience with participation in and responsibility for coordination and control. Because minorities have more room to grow they frequently change very rapidly and once such characteristics as self confidence begin to develop at this rate, there may constellations of changes which appear to others as a personality change.

This inevitably effects the nature of the web of relationships in which a developing individual is embedded. A person treated as and taking responsibility as an adult at work for example is not going to continue to put up with being treated as a child or second class citizen at home or in their community associations. Democratizing a work place may then have the side effect of precipitating a rash of divorces or near misses. This was the experience of the CCE after democratization began in March, 1973 and other organizations have reported similar incidences. Empowerment, the in word at the moment is a direct function of responsibility for coordination and control. Thus while the PD workshop is in its structure and process, uni-sex, it is in its effects strongly biased towards women and other minorities.

There are, however, phases and plateaus in every growth process. A common first phase after democratization is developing up to one's first limit or expectation, and then what? Many tend to stop there, satisfied with their achievement which creates a problem for others of their minority group who wish to go further. This limit is often the result of conditioning; a built in barrier to expectations. It is often only a state of rest and consolidation before growth is resumed. But it sometimes hides a deeper reality and one that is rarely discussed.

Many women particularly who have had the opportunity to make it to the top have balked at doing it in the old system. To make it would have meant suppressing the system of ideals and values that have shaped their life and to which they steadfastly adhere. To join the rat race in earnest and show how good they are would mean putting others down in a vicious competitive system which is the opposite of everything they believe in and hope to see. At stake here are ends and means. Can people who believe in equality and cooperation achieve them by playing successfully in such a system as a bureaucracy? Many women say 'no'. They opt out, taking only what they materially and psychologically require, without changing their sights; believing that the bigger system will not change and to play it will only damage themselves and others; only further the system.

Others take a paradoxically similar but opposite line (the similarity lies in the fact that they accept that this bit has changed but that the larger system context won't easily). 'Once we're in there, we can change it to serve our value system. Once there is a majority of women in the top echelons, then you will see a change.' That remains a hypothesis. Some go hell bent to win against enormous odds, against the system; some win, some lose. Some do genuinely win and retain

their identities, others take on the identity of the oppressor and become the new oppressors.

These consequences contain several lessons. The first is simply that if you wish to redress the power balance between the sexes or other oppressor/oppressed groups, going to the heart of the problem does work and has flow-ons which some may not consider desirable, but which do indicate, perhaps more powerfully than at the original site, that the problem is one of bureaucratized power.

The second lesson is that women and other minorities have rarely been so badly damaged by their learning in bureaucratic structures that they need specialized training in assertiveness, stress management, effective communication or democratic behaviour. In short, they do not need activities divorced from their normal flow of life activities to learn that they are human beings and how to behave as such. All they need is a fair opportunity. But if oppressed minorities are to remain in bureaucratized structures, then of course they will require these sorts of boosts to enable them to survive.

If we were really serious about a democratic society then our strategy would be to change the structures in all our institutions, particularly the 'educational' ones. A combination of the second educational paradigm plus PD at all levels would be a powerful preventative of the human and organizational realities that keep social scientists in work today.

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MATCHING EFFECTIVITIES TO AFFORDANCES IN THE DESIGN OF JOBS

Fred Emery, March 1985

In an open systems framework or in other words, a framework for ecological learning, system and environment are interdependent, mutually defining the other and imposing limits on each other. Affordances are what the environment offers to the system at any point in time. An environment containing a hungry tiger does not afford the opportunity for a relaxed picnic. It does afford the conditions for a rush of adrenalin, a quiet retreat to the four wheel drive or a bit of target practice. Each of these latter are effectivities, the actions the system can make on the environment.

These new ways of conceptualizing the relations between system and environment allow us to be more precise in our analyses of organizational structures. The following is, therefore, a more powerful elaboration of the six psychological requirements for human activity (Ed).

People's actions do not arise as mere responses to external stimuli, neither do they arise as responses to internal stimuli such as images, thoughts and memories. Their actions arise in response to the situation defined by the relations between their effectivities and the environmental **affordances**. Such meanings as the situation may have for the person are in these relations and not in the person or in the environment taken separately. Environmental affordances can only be specified with respect to the effectivities of some organism; effectivities can be specified only with respect to what some environment affords.

Any model of communication that attempts to explain human action must deal explicitly with the interrelation of affordances and effectivities.

Extended organized activity is facilitated by communications as they enable co-actors to match their joint effectivities to affordances presenting in different places at the same time or at the same place at different times.

Organizations are nothing other than the controlled and coordinated effectivities of the co-actors where these effectivities include their abilities to detect affordances and to communicate with each other.

Decision making

When conditions have been designed for operation via a self managing group the question must be faced as to whether the group has within it sufficient knowledge to make wise operating decisions. They can of course not just refer questions to an experienced supervisor. If they have enough knowledge they can make quicker and many more precise decisions than could any single supervisor who has to try and supervise the whole operation.

For the operators it will not be enough that they know one specific job. If they are to make the most of the flexibility built into the design they must know what is going on at any of the posts they may find themselves at any time. To be effectively multiskilled they need to know the logic or science that governs the whole operation in their sections, not just the isolated bits that are traditionally associated with one or more of the jobs in the section. In the staffing of the new Porsgrun Fertiliser plant, 1965, this necessitated over 200 hours of formal training in industrial chemistry, instrumentation etc. In the staffing of the Woodlawn Mine and Treatment Process, 1974, this required up to 800 hours of formal training (although most of this was skills training rather than knowledge creating). Increasingly self managing groups will need to have knowledge of the statistical and other computer aided techniques used for control over quality and system analysis. Decisions that an experienced supervisor might make by 'the seat of his pants' will, in a self managing group, often need to be grounded in facts.

A debatable area is whether members of self managing groups need educating in the managing of themselves. There are those who recommend training in Group Relations. This is justified on the grounds that work experience will have given people very little positive experience of cooperation. However, because the authoritarian organization of work does not afford opportunities for overt cooperation we should not overlook the covert cooperation that is a feature of worklife and the extensive experience of teamwork that most people get in sport and other nonwork activities. We should probably accept that if people are able to carry on a conversation they can cooperate. To treat them otherwise verges on an insult.

Opportunities to learn and go on learning/Capacity to learn

A properly designed self managing operation will afford opportunities for the two essential objective conditions for learning, namely that the groups can negotiate for variation in their goals so that they be confronted with an optimal level of challenge and they get timely and adequate feed-back on their performance. Without the latter there can

be no experimentation to find better ways of working and goal achievement is simply a matter of luck.

Whether the possibilities for learning are realized depends upon whether the people of the self managing groups are capable and desirous of making the most of them.

Not everyone in a self managing group needs to be fully multiskilled or an expert in all of the operations of the group. It is possible to operate efficiently if there is a core of people who can cover each other in the event of absences for sickness, holidays etc.

The existence of such a core depends upon prior selection and the existence of procedures whereby the group can dispense with members who are unable or unwilling to learn. We are referring here to an essential core. Where a core exists it is easier for such a self managing group to find a useful and meaningful place for a handicapped person than it is for a traditionally organized section.

Optimal variety/'Programs for action' (Planning)

We can design for a self managing group so that it allows the members to achieve reasonably optimal levels of variety.

However, we often cannot design out some routine work that could be sub-optimal if engaged in for long stretches of time. Also, we sometimes cannot design out the need for a number of highly demanding tasks that, if they cropped up at the same time could cause overload.

There is thus a challenge to the workers to plan their work so that no one gets too much of the routine and no one is too long stressed by overload. More importantly the work needs to be planned so that the routine tasks are embedded in the completion of significant tasks and that, where there are a number of significant tasks that could compete for attention they should be prioritized.

Just as the capacity to learn is enhanced by improving the knowledge base of the members of a self managing group then so their ability to optimize task variety should be enhanced by their knowledge of what is important and their ability to learn better ways of working. A 'job enrichment' plan imposed from without is hardly every going to be as good as the plans they evolve to meet their particular circumstances and their personal needs.

In extreme cases prior selection for ability to tolerate boredom or stress might be justified. Generally speaking they would not be. Given the freedom of movement that is designed in for self managing groups

even minimal planning should reduce the stress found in the traditional one person-one station jobs. Also, the social climate allowed for in self managing groups should help most people to live with degrees of boredom and levels of stress that they would not tolerate on their own.

Mutual support and respect/'Co-orientation'

The crucial feature of the design of self managing groups is that it does **not** afford support for individuals to pursue egocentric or competitive work goals. It affords support only for cooperative efforts.

The critical question would appear to be whether people whose working life has been spent in 'looking after number one' in competitive settings are able to adjust to such a radically different style of working.

Note, however, that the job design requires only that people relate to each others efforts so as to fulfil the objective requirements for completion of the tasks. It is to be expected that, with a little experience, they will develop an appropriate level of respect for what the other brings to the joint task and a willingness to support others, as they expect others to support them. If friendships should develop in the process then so be it, but there is no way that the design presupposes or requires friendship.

What a self managing group affords or does not afford in the way of mutual support and respect is very obvious to any participant. They can see it for themselves and do not require fancy concepts or special courses in sensitization in order to detect it. Whether they are prepared to work in this way can be determined only by self selection processes.

Meaningfulness of job and product/Relevance

In self managing work groups there is no room (at least no necessity) for donkey jobs. It is possible for all members to contribute to the significant tasks of the section. There is, however, little that job design can do with respect to the social value of the section's end product except to enhance the quality of that output.

Whether the group members feel that their job has relevance may depend a good deal on how well they are informed of who their ultimate customers are and how well their product is respected.

Desirable future/'Expectations' (level of aspiration)

How far can design of jobs afford objectively better future opportunities beyond the organization?

Perhaps self managing groups should consist only of people whose career aspirations do not extend to the top level of multiskilling? That is not too realistic. There will be many whose level of aspiration will be raised when they discover how easily they can master new skills and how well they can contribute to the management of their group. Those who have expectations of achieving managerial levels might be encouraged to enter via this path rather than via an MBA.

Overall observations

There is a long tradition of trying to scientifically match people to jobs (effectivities to affordances).

The problem is radically transformed with the introduction of self managing work groups. They are able, within limits, to constantly vary the way they work to find a better match. Nevertheless they require resources of education, skilling and task related information that are not found necessary in the traditional workplace. They also require rights in the selection process that are not normally extended to employees. When we are dealing with the staffing of a new 'greenfields' site then the way the jobs are advertised and explained usually works very efficiently to attract those who welcome what self managing groups afford. When an old workplace is being transformed there are always many serious problems with individuals who stand to lose what was a privileged niche. Often the niche is no more than a privileged relation with the supervisor, job ownership of a particularly efficient bit of equipment or a cushy task. These are not questions of potential effectiveness but of willingness. They are no more open to 'decision by rule' than are divorce proceedings. The only guidelines emerging from past experience of unionized plants and offices is that the easiest way out is to buy out the opposition (as it is for displaced supervisors); if that is not possible use peer pressure before using the Personnel Department.

LAISSEZ FAIRE vs DEMOCRATIC GROUPS

Fred Emery, May 1988

The following is an edited covering note and letter from Emery to Fiorelli after the publication of his 1988 paper.

There are many social scientists, usually those seeing themselves in OD (Organizational Development) who believe that laissez-faire, consensual groups are a half-way house in moving from autocracy to democratic work groups. Therefore, they argue, it makes good practical sense to change one step at a time. Furthermore, most managers are happier to just ease up on the traditional autocratic patterns a little at a time, with the reassurance that they can readily revert to those familiar ways if the going gets tough.

This is not what Lewin found in his series of social climate experiments but that was in the late thirties. Few subsequent empirical studies have provided a direct, simultaneous comparison of the three forms. Such a comparison is provided by Fiorelli, 1988.

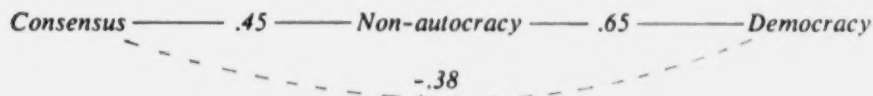
Fiorelli saw that his evidence challenged the popular notion that "the interdisciplinary team approach is equivalent with shared decision making and broad-based participation." Reanalysis of his data suggests a much stronger case for his views (and Lewin's and mine) than Fiorelli is able to make using conventional methods of analysis.

Dear Dr. Fiorelli,

I share your concern that much of what is passed off as teamwork in interdisciplinary work settings is just so much eyewash, and your beautiful research design has produced, naturally, a beautiful set of data.

My concern is that in following the generally accepted forms of analysis you have done justice neither to your data nor your theoretical and practical concerns. I have re-worked your matrix of correlations and will outline what I think your data tells us, then outline the method of analysis I have used.

1. The correlations you observed between the three social climates are rather puzzling (p.9) in the light of the confident statements made by Rostow and others about teamwork and consensus. However, the following little graph is the only logically consistent statement that can be made on the basis of your data:

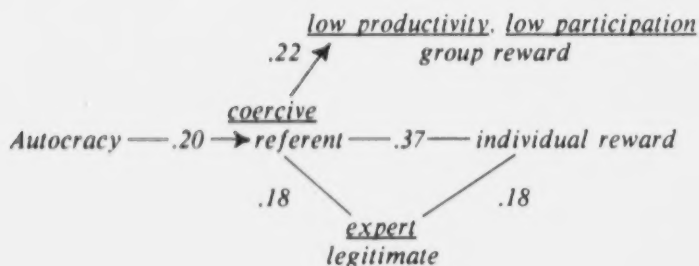


You have reaffirmed what Kurt Lewin discovered in 1937-8. You may recall that Lewin helped Ron Lippitt to set up his experimental studies of autocratic and democratic social climates and was then horrified to find that the 'democratic' groups were chaotic, unparticipative and unproductive. He then discovered that Lippitt's idea of democracy was consensus, 'laissez-faire'. So Lewin, Lippitt and White ran the next series of studies that included autocratic, laissez-faire and democratic social climates (thank heavens). They then found what you have found. Namely, that for all the fine sentiments associated with that sort of team building it is disruptive of genuine self determination. Consensus and a wide range of tolerance for each doing their own thing has damn all to do with democratization of the workplace. The critical thing in the latter is that those who contribute to group performance make the decisions about how they coordinate their work; not some supervisor. If some individuals insist on a consensus that permits them to do their own thing, in their own way and at their own pace, then they are in the wrong work group.

2. We can graphically represent the data in the matrix of correlations to see what they tell us about what the 'management styles' mean for populations like your sample. The results are presented below.

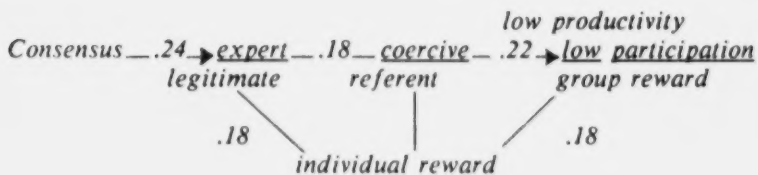
The dynamics can be read off these graphs as you would read a road map. Simply ask 'what processes do we have to go through, instead of towns, to get from one point in the graph to another?'; eg, social climate to productivity. If I make a few comments it may help orient you to this way of dealing with the data.

Autocracy



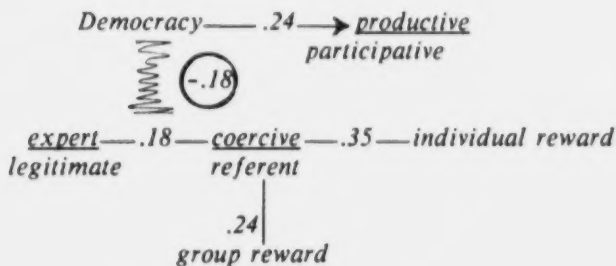
Thus, in the case of autocracy the critical mediating variable (system principle) is 'coercive/referent'. In this sort of setting individuals in your sample show a significant tendency to 'crawl' (referents) or cover their backsides with qualifications and/or knowledge of the bureaucratic rules (expert/legitimate). The only significant contribution to productivity/participation is the ability of the authoritarians to exercise coercion and demand respect (loyalty?). The data indicate that the individuals are watching the boss, not productivity; also that rewards go to supporting the authoritarian status quo, not productivity, nor participation.

Consensus



Consensus differs primarily in that expertise and legitimation are up front instead of coercion and 'reference'. It results in a closer identification of personal and group rewards, but within the same context that treats productivity and participation as irrelevant. In the last analysis, coercion and 'reference' remain as the direct determinants of productivity and participation, and are still having negative effects.

Democracy



Democracy reveals a radically different pattern. It is the only 'social climate' that is related to higher productivity and participation. And this relation is direct and unmediated. In this sample, however, we note that it coexists and is negatively correlated with (constrained by) the typical bureaucratic pattern that ties personal and group rewards to coercion and formal statuses.

Do I read too much into these graphs?

Quite possibly. I can certainly read much more from these graphs than anyone who has not got comparable knowledge of the previously observed relations between these variables in other studies. But even if this is fallible, the main concerns here are the kinds of judgements I try to make about the premisses yielded up by this form of logical analysis of the data. Unlike the Blalock type of 'causal path analysis' the method used here is not contaminated by prior judgements about which of a thousand and one models should be put to the test. The weight of my judgement obviously depends on the validity and reliability of the data but the data can only assert what is in the graphs. If the data is accepted and replication of the analytic procedures reveals no error, then any debate has to be about the explicit judgements I have made. The essence of the method I have used to rework your matrix of correlations is given in Emery F, 1981, Vol.1.

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GETTING TO GRIPS WITH THE GREAT 'SMALL GROUP' CONSPIRACY

Merrelyn Emery, January 1978

(This paper was originally delivered to a conference of 'small group trainers'. The author was once a member of this tribe but left its ranks after becoming aware of some of the manipulations involved, the elitist purposes for which they were often practised and not least, the fact that there were genuinely democratic alternatives. Minor changes have been made to the original.)

The concept of a small group was once a pure and scientific concept with a meaning. It has degenerated into a fashion and a fad and almost any situation that includes more than one person is now called a 'small group'. Nothing could be more meaningless and in fact destructive of what was once a heuristic concept.

'Small group' was also once a useful and practical concept. Its proven usefulness arose from two streams of practical theorizing; from those whose job it was to help the sick and socially inadequate, and from those who realized that it is the structure of society which is sick and needs restructuring. These were not mutually exclusive streams but simply varieties of purpose within a learning network of action researchers.

What is a group - really?

It is a group of people who are commonly engaged on a task, sharing without status distinction the responsibility for:

- . completing the task to some agreed level of satisfaction; and
- . their own control and coordination.

If anyone of these elements is lacking, the aggregate of people gathered together in the one place is not a group.

'Small' is variously interpreted as somewhere between four and 15 people.

The most misunderstood and misnamed situation is that where there is a gathering of people with a leader. This is by definition not a small group. This situation was originally designed by the therapeutic stream where the goal was to restore to the sick their capacity to function fully as human beings in society. The aggregate and their leader only became a group when the sick had become strong enough to negate the status distinction between themselves and the leader, either by throwing her or him out, or by making it quite clear that the leader could be a member of the group on strictly equal terms; ie, cease to be the leader.

Bion's classic studies of the development and dynamics of groups make quite clear the fact that people wish to be members of self managing groups but in the early stages of coming together are no more than an immature form or prototype. In fact, Bion's work was as a therapist with war casualties and his job as the leader or therapist was to bring his immature groups out of the grips of the 'group assumptions' into a consistent stage of mature group function; self management. The 'group assumptions' of Dependency, Fight/flight and Pairing are the assumptions an immature group makes about its relationship with its leader before they have the confidence to become a well functioning and independent group. This Bion called the Work Group because it could and wanted to purposefully do a task important to all its members. These group assumptions or emotions are consequences of structure (Bion, 1952, 1959; Emery M, 1982, 1986).

Today we rarely see in the fashionable form of 'small group' work, the case of a leader being deposed. There are several good reasons for this. One is that most leaders enjoy the status and power of being the leader and consciously or unconsciously manipulate the situation so that the hierarchical distinction is maintained. The second is that the leader who is genuinely intending to use the situation for therapeutic or democratic learning purposes must have exceptional skills, knowledge and personal abilities. This is a rare combination and a lot of people who 'run' groups these days wouldn't know what I'm talking about. The groups they are 'running' have nothing to do with democracy. They do have a lot to do with subtle autocracy, laissez-faire and the group assumptions.

The genuine therapist's task is made even more difficult when they operate in a society whose members have been socialized from birth to accept and revere status distinctions and the concept of a 'higher authority'. A leader in such a situation who is themselves infected with the spirit of a 'higher authority' or who does not have the requisite skills to decontaminate their clients, is doing no more than reinforcing the sickness of authoritarianism which exists in the structure of the society at large.

This very simple fact appears to have been lost in the great rush to 'go into groups' - for every conceivable purpose, many of which do not in fact constitute tasks; eg, at conferences, to have a discussion. No wonder many normal healthy people come out of this feeling angry and frustrated. Many walk out of sensitivity or team-building 'groups' feeling the same way and for the same good reasons. They are suffering from the group assumption of fight/flight brought on by being denied the right to exercise some control over a situation in which they find themselves and/or being asked to perform a non-task in the same circumstances. They practice the assumption in the flight mode because the situation contains nothing worth fighting for. But they won't put up with being treated as less than human and exercise their right to leave.

Why has there been this phenomenal stampede into the fad of 'groups'?

First, because most people survive the bureaucratized society relatively undamaged but very aware that there must be something better: they search and they end up in 'small groups'. Second, because those reared to believe that some are more equal than others see in the 'small group scene' opportunities for maintaining the status quo and procuring a top spot in it for them, by the manipulation described above. The phenomenon bears all the hallmarks of a profession bent on imperialism. The motto could well be 'keep them busy and involved' (but keep them infected with respect for the leader).

This aspect though covers only the experiential, high visibility side of the strategy. The other nine tenths of the iceberg, the culture of silence, is widely shared. Almost nowhere in our Western culture is there any opportunity to learn conceptually and cognitively about structure. Yet it has been learnt and known for centuries that for knowledge to become 'understood' and therefore usable, it must be conscious and conceptual as well as experienced. If the 'small group' practitioners were to start arming their clients with the conceptual tools to analyse and understand the structures of the 'small groups' they are running, they would quickly do themselves out of a job.

Let's do away with all the mythology and trappings of the great 'small group conspiracy' and start being honest with ourselves. If we really want a society where people can exercise their so-called democratic rights to take responsibility for themselves and start functioning as full scale human beings, then we have to do two things. We have to:

- . start helping people learn about the concept of structure and it will involve the direct transmission of some information (a nono for some 'group trainers' dedicated to learning experientially);
- . provide situations where they can practice with the genuine article, the genuine small group.

Perhaps we are worried that self managing small groups won't fulfil the claims made for them, or that perhaps people don't want to take responsibility for themselves and share the decision making about control and coordination with their mates. Be reassured, they do and they do. Anybody who has ever seen a group take the bit between its teeth when they were given the chance to start making these decisions in the interests of the whole, and the ways in which they react if they suspect later that the exercise was not genuine, won't need my reassurance.

Mind you, if a group suspects from the start that a project is a con and if it does not have sufficient sanctions to safeguard their whole hearted participation, they will practice fight/flight, usually the second half. While this is actually a rational response, it can be taken or interpreted as a refusal to accept responsibility. But once a group or organization does have the bit between its teeth, it is a brave or foolhardy manager who will attempt to turn back the clock. As was said above in the introduction, it is hard to put down ideas which really fit with people's expectations and nature.

There is also more to the concept of structure than what a genuine small group looks like and what happens inside it. Organizations, institutions and societies also are and contain large systems, and small and large systems are systematically related. We must also teach structure on this scale. To do less is once again misleading and can be downright destructive.

To turn a small number of people into a genuine small self managing group through experience but without any conceptual understanding, and send them into a hostile and ruthless environment, which is what a large bureaucratic organization becomes when it is challenged or senses a threat, is courting defeat and damage to the people and leaves the bureaucratic organization unchanged. It is even worse to take an individual and send them back alone. But that is exactly what is happening and what many 'small group' practitioners are promoting as in the interests of democratic learning for democracy.

If we are really going to change this society we must embark on a strategic educational campaign reaching eventually all its members, of all ages and at all levels in the current pecking order. And we must provide them with an education which is both conceptual and experiential. It is possible.

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PART III. DEMOCRACY THROUGHOUT THE SYSTEM

This Part contains the three original documents in Emery (F's) thinking about extending democratization from the small group or work section level to the integrated enterprise, whole system and governmental level. The first paper is extracted from his most recent thinking published as Towards Real Democracy, 1989.

In his introduction to this new volume Emery writes: "Twenty and more years of experience with worker participation in industry has radically changed the perspective both for democracy and for the role of adult education. The change in the first perspective is immensely more important - a change that suggests that the democratic process of 'government by the people' might actually become a true 'university of life'. This is not a theoretical paper. It is concerned with extrapolating to politics from practical experiences in the democratization of work." (p.iv)

Thus the nexus of adult education and participative democratic structures is highlighted. If adult educators are not concerned about promoting organizational environments which automatically produce learning, they will have to be content with knowing that they are aiming only for second best, always attempting to fill in the gaps and redress the damage done by structures inimical to learning.

The 'Adaptive Systems' paper marked the high point of a trip to India at the request of Professor Nitish De, sponsored by the National Labour Institute, New Delhi. In typical style, all the critical questions and issues raised and the first answers provided appear to have stood the test of time.

Following its presentation, we visited several sites in India only to find that India had its own indigenous examples of the jury system being applied to management in industry. It was clearly an idea whose time had come and demonstrated once again the spontaneous and simultaneous springing up of initiatives around the globe, as intuitive adaptive responses to needs created by a changing environment.

The third paper was a submission to the Minister for Industry and Commerce following the report of the Jackson Committee on manufacturing industry. It addresses the actual structure and operation of an industry council as a participative rather than representative democratic body. As such it serves as an example or analogue for other purposes.

In the fourth, the principles, rules and logistics of the jury system are elaborated as they would need to be in the political or governance arena.

Together, they form a set of basic guidelines for the extension of participative democracy from the single organization to the total societal infrastructure - the need for which was outlined in the first paper of this volume.

TOWARDS REAL DEMOCRACY

Fred Emery, 1989

It seems as if each major election in a Western democracy brings forth another spate of serious public discussions of the weaknesses of the democratic forms of government. If it is not the quality of the candidates that is being deplored it is the quality of the electoral campaigns or the cynicism of the electorate. Between elections the media appear to be constantly preoccupied with the recurrent scandals of political corruption and deception.

Some of this can be dismissed as 'media hype'. A great deal of this cannot be so dismissed.

What is absent is any sense of our learning from the seemingly endlessly repetitious analysis of the faults in the system. It is not quite fair to say that. There has been, over the past couple of decades, a number of promising ideas; eg, for Ombudspeople, Freedom of Information and more effective electoral registration and redistribution. However, even when these ideas have been adopted, the expected improvements in our self governance have failed to appear or, if they did appear, were quickly and seriously attenuated. The only real learning appears to be that nothing can be done.

I have suggested that this debate is bogged down because we cannot think in terms of anything but representative democratic systems. Furthermore, I have suggested that those systems have a powerful and compelling logic of their own. Locked into that logic we finish up with Churchill in deploring 'democracy' but deploring the known alternatives even more. It has been my contention that, behind the backs of political scientists and others concerned with political democracy, practical democratic alternatives to the representative systems have already emerged. These are alternatives that enable us to move closer to the ideal of democracy; ie, toward participative democracy in the conditions of the modern industrial society.

I have not been discussing participative democracy just as a theoretical possibility - there was quite enough of such empty speculation in the late sixties. I have been discussing implications of enduring practical experiments in the harshly practical world of work. In the world of work those ideas of participation have gone from being interesting possibilities to serious probabilities that have to be considered in the design of any work organization. All that I have done in the world of politics is to claim that this experience has transformed the idea of participation from a mere theoretical possibility into a real, practical possibility. Not much of an advance - but then people will only take

seriously those things that are real possibilities in the world in which they are living. If we fail to recognize that real democratic alternatives to representative systems are possible, then we remain condemned to continue on the flight path of the fabled ooloo bird who flew in ever decreasing circles.

Life, Liberty and Property could well have served as a title for this document (Towards Real Democracy). That title was, however, pre-empted by Alfred Winslow Jones in 1941 to cover in his own way the same social dilemmas of modern democracies. These dilemmas are the provision of social support to the needy without creating dependency, maintaining civil peace and good order without creating servility in the face of 'the majesty of the law', allowing for the property rights that are a condition for people entering the market as free people whilst guarding against those extremes of power that make a joke of the economic freedom of the majority.

These dilemmas have confronted all democratic societies. There is nothing surprising in this. Whilst some market oriented societies have not been democracies, all known democratic societies have been market oriented. One can expect that when people experience the freedom that comes with participation in markets (as propertied persons, not slaves) there will emerge social pressures to exercise similar choice of preferences in their governance. If it is accepted that they are competent to do the one, they will not readily accept arguments that they are incompetent to do the other. However, reliance on the market instead of administered exchange fairly, inevitably means that many will be 'needy', that many will emerge with great wealth and that those with great wealth will unduly influence the law makers and the enforcement of the laws.

The dilemmas have been greatly intensified by the emergence on the one side, of the massive bureaucracies of corporations and public administration, and on the other of a highly educated electorate freed, for the most part, from the mind dulling drudgery of labouring and menial service. It is the new level of these dilemmas that has been addressed by people like Dahl and Lindblom. But in 1977, Lindblom could still conclude that "boldly conceived major new democratic alternatives have not yet been designed. They may never be..." (p.344)

After analysing the interlocking roles of modern markets and modern politics, Lindblom observed that we have still failed to appreciate adequately the probability that "more than class, the major specific institutional barrier to fuller democracy may, therefore, be the autonomy of the private corporation" (p.356). It is this failure that appears to lead to his conclusion that without boldly conceived major new democratic alternatives "it may follow, then, that it is impossible for democracy to develop significantly beyond what is found in crippled form in existing polyarchy" (p.353). Without apparently

knowing what had been emerging in the world of work since 1951, Lindblom felt that "the most fertile field for a more participatory democracy appears to be in industry...an arena in which authoritarianism has been for so long universally practised and little questioned" (p.334).

I have argued for a "bold major new democratic alternative". I have argued for this on the basis of lessons learnt from the emergence of participatory democracy in industry. Whatever the shortcomings, I hope that I have established that Lindblom's expectations about the most fruitful starting point for finding a bold new alternative have been justified (Extracted from Towards Real Democracy, 1989, Ontario QWL Centre, Ministry of Labour, Toronto, pp.119-120 and pp.211-213).

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ADAPTIVE SYSTEMS FOR OUR FUTURE GOVERNANCE

Fred E Emery

First Rafi Ahmed Kidwai Memorial Lecture delivered on 14 April 1974
at the Indian Institute of Public Administration, New Delhi

There are two paths which we can take in our basic social designs. I am concerned only with that which bases itself upon the multiple capabilities of the human being. I am not concerned with improving on designs that start from assuming that the individual is a redundant part, a cog. We have shown in our work that efficient large scale production does not necessitate that people be designed into the systems as readily disposable parts (Emery & Thorsrud, 1975). Similarly, I think it has been demonstrated that mass education does not have to proceed on that assumption (Williams, 1975). More than that. The practical demonstrations have shown that productive systems and learning systems are far more efficient when they are designed to utilise the multiple capabilities of workers and students.

In the process of making these practical demonstrations over the past two decades we were in effect demonstrating that **participative** democracy could become a reality, even in the hostile autocratic climate of industry. This would appear to be so regardless of technology; there appears to be no form of work requiring the coordination and control of human effort that could not be better done by creating some degree of self management. After many years of experience it became clear to us that this was true also of management work and the work of research and development teams.

But, all of that is to my mind as a scientist, just about past history. The basic theoretical problems of democratising work have been confronted and have been solved. The problem I now wish to direct myself to, in honour of the cause for which Rafi Ahmed Kidwai worked himself to death is, how can the ideas that successfully led to participative democracy in the workplace, be projected in the higher and more remote areas of management and government, to replace or at least supplement the Westminster model of elected representatives?

It was one thing to have demonstrated what can be done at the workplace, the coalface, bench, desk and drafting table. At that level it was practically always possible to allocate responsibility to groups that were small enough to participate in helping each other to manage their tasks. How, however, does an operator or even a middle manager participate in the decisions that affect him when 5,000 others in a town of only 100,000 participate? How does a citizen in a nation of even 3,000,000 participate meaningfully in national decisions on things

like economic policy or defence one has only to pose the problem in these terms to see the apparently insuperable difficulties.

A large number of premodern societies based on small self sufficient communities have used participative forms of democracy. However, even meetings in the village place or town square have their marked limitations - to be easily swayed by orators, by rabble-rousers and by unscrupulous chairpeople; too little time to allow but a few to speak; too little 'round-table' discussion to explore differences or test out whether agreements are based on common understandings; too little preparatory work by most to permit effective participation; too little shared knowledge to permit complex and technical matters to be discussed.

The difficulties in the large and complex modern societies are so great at first sight that only last year, when I confronted the problem, I felt compelled to conclude that "it is not possible to democratise those arrangements (of social power) in any form of (modern) society of which we know." (Emery & Emery, 1975, p.172) The best I thought that might come to pass was "that they (the power-holders) so arrange their exercise of power that it is consonant with a democratised society." (p.172 *ibid*)

It would seem the crassest form of hubris for one to tackle this problem with any expectation of success. I will nevertheless make the effort because; (a) I think it is a hurdle we must sometime, some place, succeed in jumping, or else our hopes of adaptive large scale human societies are foredoomed; (b) new ways of effective participation have been evolving (and I am *not* referring to telecommunications technology); and (c) I do not set myself the target of succeeding. I set my sights much lower, namely to convince others, if they also try, that one day this service for humankind will be successfully performed.

If the problem is so difficult why do we not just settle for using representative democracy to cope with the extended forms of social cooperation and control? After all, when we set course to devise participative forms of industrial democracy in Norway, in the early 1960s, we accepted the possibility that they could put flesh and blood on the formal representative schemes such as Works Councils and thus enable them to function fruitfully (Emery & Thorsrud, 1969, p.97). Participative democracy was subsequently brought into many workplaces but the representative structures did not come to life. Worse than that. When a new labour law in Norway (1973) required elections for Works Councils the workers in the already democratised plans showed a very significant lack of interest.

I think we have to look below the surface similarities of representative and participative democracy. The system characteristics of

representative democracies are not quite what we have been led to believe by the so-called Westminster tradition. First, at the interface of politician and electorate everything possible will be done to turn it into a 'safe seat', a 'blue-ribbon electorate'. This means actively working to create a captive and non participative electorate, one that does not pressurize the representatives about the changing requirements of their community. Second, the interface with the executive apparatus of the state, or city, will be as tightly centralized by the politicians as is possible. Thus, even the majority of elected politicians must be non-participants in the work of Government. Third, the tiny minority of representatives who become Minister, or the equivalent at the local government levels, find that they must accommodate to other sources of social power, sources of power that do not operate via the electoral machine.

In defining these characteristics of this system, I have drawn on experience with representative democratic systems at the social level; ie, community, region and nation. When the forms of representative democracy are brought into organisations there is one pervasive difference - the owners and managers retain prerogatives of power that are equivalent to those retained by monarchs and lords in the early days of the Westminster model. Those were the days before the Cabinet system became so prominent. And so we find it with the representative forms of industrial democracy: the first and third characteristics are clearly displayed but the second is in an embryonic form. There has not yet evolved a 'cabinet' system whereby some are elected from amongst the workers' representatives to exercise on their behalf the power they collectively represent. Instead we find individuals trying to curry favour so as to appear more influential with the bosses. It does seem to me that representative systems of democracy in society and in industry are all members of the same class of systems. They differ in maturity and power but they have the same inherent dynamics. In effect, they are systems that inherently act to minimise participation. In fact one might say they thrive on the apathy and anomie of the great majority. However, they induce many who have social power without standing for elections to engage in the fine art of politicking to 'fix' which minority of politicians will exercise the decision-making functions, and about what. This lobbying is admittedly a form of participation but it has more to do with corruption of the body politic than with democratic ideals.

These tendencies of representative systems to generate mass apathy, elitism and corruption are my reasons for believing that we cannot stop with what we are already doing with democratisation of work. In some way or another we must find a way to redesign our larger scale systems of government so that they are truly based on the multiple capabilities of all the people. Only thus will these systems be adaptive enough to cope with the social turbulence we face.

Before suggesting some new adaptive designs, let me first point out that the problem is not quite as insuperable as it originally seemed to me. Elsewhere, I have shown that replacing a bureaucratic structure in a large organisation with self managing groups at the grassroots reduces the amount of up-and-down communication by about **ninety** per cent (Emery & Emery, 1975). More than that. The them-us context of communication in a bureaucracy distorts all communication and stimulates the insatiable need for ever more communication. This is transformed. The very emergence of self managing groups defines an area of common interests and a context of 'we-ness' which encourages open and truthful communication. More mutual understanding between managers and workers is achieved with a mere fraction of the old amounts of talking and formal reporting.

I have been talking here about effective communication in large **organisations**. Whether a similar change would take place with a grassroots transformation of an extended aggregate, like a city or a sector of industry, has not, to my knowledge, been demonstrated. I suspect it would. In fact I find it hard to even imagine anything that contributes less to mutual understanding in a community than the current vast expenditure on one-way communications to the masses via television. Let us now take a close look, in turn, at the possibilities for new participative forms for the management of very large enterprises, and for the governing of large populations. Remember that we are looking only for points where a start may be made; we are not expecting any final theoretical solutions.

Alternatives to Management arising from the grassroots participation of the workers

Let me sum up the situation, as I see it, in three points:

When worker self management is established, we find that the Managing Director works much more on serving the whole range of concerns of the board, not just internal management and the immediate interfaces with customers, suppliers, regulators and others. He lets his management team look after a great many of the matters of internal management that were formerly centred in his role; that is, coordinating and controlling their efforts so that the operating teams know what is being asked of them and are supplied with what they need to get on with the pursuit of those objectives.

I do not think that our experience with democratisation at the workplace has suggested that no one should be in the management unless he or she has a proven capability to carry the managerial responsibilities, or has been selected because they are judged able to learn to do so. There seems to be no

role for a workers' representative, as a departmental or divisional head. This is because there are still many areas of difficult decision making for which experience at the workplace is not an adequate training. Something like management training is required, because the need for managers is still there in all the larger organisations.

What meaning can participating democracy have at this level? I think that participation in management has at least three necessary features:

- . that the work of the managerial employees be itself democratised;
- . that the interface of management with the work teams be participative. Therefore, the translation of management objectives into team objectives and of team performance into release of more company resources needs to be conducted at regular and frequent meetings of a 'core group' of workers and management (Emery & Thorsrud, 1975; McWhinney, 1975);
- . that the interface between management and the board be transformed by: (i) clearly defining their shared values by a statement of organisational purposes and philosophy, one that recognizes the principle of trusteeship (Hill, 1971); and (ii) that conscious efforts be made to ensure that the mental models of the organisation and its environment held by management and the board be more closely matched, although in the first instance those models should be arrived at as independently as possible.

Alternative to the Company Board

I do not think that the functions of the board are best served by increasing management participation on the board. That sort of participation, even though it is democratic in form, threatens too many other wider and longer term social interests. I see no viable alternatives to the company board, and that applies equally to private enterprises and nationalised enterprises (Emery & Thorsrud, 1969). No other body can perform the function that they serve; ie, overseeing the allocation of generalised capital to particular investments so as to maximise the growth of that capital.

A board is hindered in serving this function if it includes **representatives** of outside parties, be they customers' representatives, workers' representatives, representatives of regulatory bodies or the like. All such representatives will be biased toward their special interest regardless of the overall company picture. Negotiation about

such special interests must be postponed until there is at least some overall picture arrived at by the board.

Then what does participative democracy mean at this level? I can see four steps that will at least help a board to keep the exercise of its power 'consonant with a democratised society':

- . the board explicitly recognises the essentially social ownership of the resources they use. If they can induce their shareholders to accept this proposition of trusteeship then they are in a position to instruct their management to make their decisions in this socially responsible way;
- . the board produces an explicit statement for their management of the philosophy that must be observed in the management of human resources;
- . the board works with the appropriate regional and industry sector organisations to determine in more concrete ways the objectives they can and should pursue in the society; and
- . the board itself works as a group having joint responsibility for all of its actions; not each acting as if they had their own private domain.

Now let us review what has been spelt out as the necessary limitations on participative democracy.

The model I have presented leaves us with three different levels of function - board, management and operators.

The boundaries between these functions should not stay where they are now, but it does seem that in large organisations these functions are at any one time best performed by different people. It also seems that these functions wouldn't be better carried out if those responsible for policy making had to be joined in the first stage of their work by representatives of those who would be subsequently influenced by their decisions.

What I am saying is that if someone is an operator, even a very good one, this is not evidence that that person could act as a good manager; being a very good manager is not in itself evidence that that person is what a board is looking for as a member. The reverse also holds. Also being good at management is no qualification for an operator's job.

Do the reservations I have spelt out about management and the board mean that participative democracy in large-scale organisations is a lame duck; won't fly far or high; representative democracy is a dead duck?

I think not.

But, if there is to be participation it must mean something other than being personally present at all decision making or always being represented by an elected peer.

With the introduction of self managing work groups the operators have effective **organisational power** and hence the relations between the three parties need not take the hierarchical form that is inevitable when the operators are powerless. The control of each other, the workers, the management and the board, can be mutual, and directed at some shared objectives. The model for their relationship should be the model which we have already successfully tested for teams in which multiskilling is not feasible or feasible only to a minor degree; eg, R & D project teams, teams of craftsmen in heavy engineering and management teams (Emery & Emery, 1974; Herbst, 1976; McWhinney, 1975). That is, for the purpose of getting the work of the organisation done, we recognise three broad classes of workers whose skills are not interchangeable to any marked degree; ie, at management, at the board and operations.

For a large organisation to function in this non hierarchical democratic way there needs to be:

- . sharing of inputs so that coordination is possible;
- . mutual awareness of each other's role of what each is best fitted for and in a position to best do or decide;
- . an explicitly agreed hierarchy of objectives (not a hierarchy of statuses) as a basis for allocating tasks and responsibilities.

The minimum set of mechanisms adequate to bring about and maintain these conditions has been outlined above in discussing the roles of management and the board. Many more and varied ways can be expected to evolve. However, two principles need to be observed in the functioning of the core groups: linking management and operator teams.

- . What might be called **the jury system**, whereby every employee can expect to be called on to serve in the **core group** at some time; whilst serving he or she is expected, like the jury person, to make their own contribution, not to act as if they represented anyone else. The fact that some individuals may not be able to make much of an obvious contribution is not a real drawback if the able ones are prepared to give a bit extra.

- . **The principle of reafference or search.** Expecting that learning is necessary, the effort should be made to learn by doing and constantly searching out and trying out new ways. If the people in the core group relapse into just pooling existing

knowledge a pattern of dependence on the experts will certainly assert itself, and personal statuses, personal praise and blame, will displace the task orientation required for successful search.

Toward Matrix Organizations

Let us now turn to the other class of problems. How can participative selfmanagement emerge in the governing of such extended populations as cities, regions, nations or sectors of industry? There is an advantage in being as concrete as possible, so I will concentrate on the most developed practical solution that I know of from personal involvement - the development of participative self governing machinery for the Australian manufacturing industry.

There has been a long history of efforts throughout this century to enhance the self government of industry. Robert A Brady has given us the most detailed analysis of the efforts up to the 1940s. Remarkably similar mechanisms emerged in USA, Germany, Italy, etc, all pointing toward the corporate state model. The essential characteristics identified by Brady were:

...hierarchical implementation of patrimonial class domination by monopolistically oriented and compactly organised vested interest groups.

(Beer, 1972, p.58)

I think these features are easily recognisable. The state lends its authority to the highest councils of industry and they lay down the law for the lower levels of councils in the branches and the regions. Within this framework the largest and most monopolistically organised firms can claim the right to be on the highest councils and then proceed to shape things to suit themselves. Nonbusiness interests are excluded from the inner councils although the councils are enjoined to extend to the workers fair and just treatment, as a father would to his children. They are also typically enjoined to eschew sharp business practices and to ensure that the customers get good quality at fair prices.

It is just too easy to recognise that these forms of self government are not consonant with a democratic form of society.

The so-called Jackson Committee for the future of manufacturing industry set its face against such a form of selfgovernment. It deliberately sought to design a matrix organisation such that:

Councils would exist for national, regional and industry branches but they would be non-hierarchically arranged, because, "networks work better than hierarchies" (p.216). There

would be no assumption that national interests necessarily override regional ones or that branch interests naturally override the interests of a manufacturer, even a small one. The underlying theoretical model is that of the 'self managing group based on minimal multiskilling' - the model we have just been discussing.

Representation on the councils would not be based on similarity of business interest but on the principle of common concern for the resources of the society that are drawn into the manufacturing process. The workers, consumers, government officials and other interests are naturally drawn into the deliberations of the councils; not excluded as in the corporate model. Membership of the councils would naturally overlap.

The overriding task of all councils is to strive for common understanding of what is happening in the social ecosystem that they share, and what are the ideals they share, and what it is that they commonly value. It is only within the framework of such mutually shared understandings that they seek to identify the changes they need in existing policies and regulations or they seek to innovate in new directions. This is a reversal of the typical joint stock operation or gambling syndicate. The first step for the latter is to decide what each wants to get from the venture and only then to consider the social ecosystem. They consider that, only in the narrow sense of what the market will bear, or what the society will wear.

These councils will not seek to do their primary business of searching out common values and what is happening 'out there' by operating in the traditional mode of committees meeting or papers-and-discussion in conference. Their processes will require a new tradition in which the searching is conducted without reference to the relative statuses of the participants and stringent efforts are made to ensure that the fight-flight emotions of horse trading are given no chance to emerge before a framework of mutual understanding exists. This will not be achieved by sitting around in meeting rooms with the usual paraphernalia of chairperson and agenda; nor by passing on business from one meeting to the next. To search successfully they will have to be prepared from time to time to take themselves off to some secluded place for several days and nights of continuous working (the committee expected that members would be so occupied three to five times per year).

In this connection, I will recall the Council of the National Farmers' Union (UK) trying to conduct a search operation through a series of fourteen half day meetings. Only after all of this effort did they admit that they were getting nowhere and in fact were making matters

worse as confusion, misapprehension and dissension deepened. They finally in despair took the whole fifty of themselves out into a country retreat and in two days and nights produced a radically new perspective for the agricultural industry. That perspective was so well worked out that it guided them through a whole series of successful decisions for at least seven years (my knowledge of NFU affairs ended then).

To judge from just the four points I have mentioned, it should be clear that the design brought forward by the Jackson Committee stands in diametrical opposition to the corporate model and it does imply some break with the Westminster traditions. It is firmly based on the principle that "integration (of policies) is better done by those involved, in the light of understood and accepted principles, rather than by imposition of a superior authority." (p.225 *ibid*)

Is this a workable design?

Provided that the Councils can learn to work in the style of a genuine 'search conference' I see no real obstacles. The existing bureaucracies will bitterly resent having their noses put out of joint but they can hardly claim that their way has been successful.

To return to my overall theme. Now that we have had so much success in solving the problems of grassroots participation, we should take up the question of more participative forms at the higher levels. I have tried to indicate some ways in which participation can be increased. We are certainly not in sight of the end of the road but the work of the Jackson Committee demonstrates that even the few theoretical tools we have are practical working tools. The encouraging lesson to emerge from this exploration is that the same basic principles of participative design that guided us in redesigning the work of skilled craftsmen, scientists, engineers and managers at grassroots level are fruitful guides to redesigning at the higher levels at which we seek to govern ourselves.

Now I think I must confront the question of whether these directions are appropriate ones for the less developed countries.

The organizational forms for industry, commerce and administration in these countries are not very different from those in the western countries or for that matter in the Soviet Union. Hence our discussion of how we might democratise total organizations is of relevance for the less developed countries.

The principles of the extended matrix organization were illustrated by reference to the introduction of democratic non hierarchical forms of self management to the Australian manufacturing sector. The principles are certainly not limited to this. In fact the first

consciously evolved matrix organization started to emerge in the British agricultural search conference to which I have just referred. Also from my preliminary studies this seems to be the most fruitful direction we can go in our present efforts in Australia to evolve democratic, non hierarchical forms of regional self government.

I cannot see any general reason why the matrix type organization would not be equally appropriate in any of the less developed countries that are genuinely striving for participative democracy.

However, I can see a practical difficulty that looms larger in the less developed countries. To work effectively the participative bodies and the government administration at every span of concern, from the village to the nation, must have mutually shared understandings about the tasks they both face and the values and ideals that guide them. We think it is a hard enough problem in Australia to create this mutual understanding between civil servants and farmers, labourers, businessmen, pensioners, young unmarried mothers and the like. We are taking the problem seriously enough to consider discarding some of our civil service traditions. The gaps we are disturbed by are infinitesimal concerned with those that exist in the less developed countries. In these countries even the minimal education which will let a person into the lowest clerical grade of the civil service is enough to turn a person right away from village life and indeed from any form of manual labour, even skilled labour. When the vast majority live by physical labour in towns and villages this is a very serious barrier to participative bodies ever effectively commanding the services of their civil services.

I think that the crux of the problem is at the narrowest span of interest; eg, where the village development officer is face to face with the villagers, the police constable face to face with the local citizens. If, at this point, there is no effective communication leading to shared understanding there is not likely to be much shared understanding when broader spans of interest are involved.

It is possible to do something about this critical interface without waiting decades for the educational level of the villages to be raised or a hundred years for their style of life to be transformed. In the Northern Territory of Australia, the interface between the Department of Aboriginal Affairs and the nomad and camp aborigines have traditionally been the district patrol officers and camp superintendents. Each district officer had his own territory and I think we have to conclude that the majority of officers gave up the struggle to understand the viewpoint of the other officers. The aborigines had no chance to understand the policies of the Department. All that they could see were the individual officers, some young and eager to help, some lazy and indifferent, some bossy and angry.

As a first step to remedy this, groups of four to five officers were given group responsibility for the whole of the four to five districts that were previously their individual territories. We found, as expected, that these groups of officers enforced amongst themselves a consistent interpretation of departmental policy and insured that, regardless of change of personnel through promotion, transfers, etc, this consistency could be maintained over some time. Working this way the officers were able to deepen their understanding of the situation of the aboriginals and support each other to the extent that each could go on learning. The old pattern of personal enthusiasm giving way to cynicism and then to drunken neglect of the aboriginals has, as far as can be detected, disappeared.

We found it possible to go a step further when Papua New Guinea decided to evolve an administrative structure that would serve their traditions of village self government and not the colonial traditions of centralised paternalistic controls. The step further was to develop in the civil service a new type of civil servant at the interface with the villages. This is now being done in two test regions, so far successfully. The set of ideas underlying these practical trials were fairly complex and hence the briefest way of communicating them is to present the original design document. It outlines both the new ways in which these 'barefoot' civil servants were to be selected and trained and the way they would work.

'TOWARD A VILLAGE DEVELOPMENT SERVICE'

Three basic principles

- . teamwork at grassroots interface - four or five officers responsible together for an area;
- . learning not teaching, not a didactic training of officers;
- . the where and when of learning to be decided by 'student' requirements; ie, down near the grassroots, in their best time. Not some sort of 'one academic year' in the physical context of an urban teaching institute.

Basically a plan for learning that starts from the villages and is contrary to the present organisation for teaching in educational institutions, and contrary to the usual *modus operandi* of their staffs.

Principle 1

- . 'Teamwork' not just 'team spirit'. Team spirit is only going to be persistent and significant if it arises from teamwork; from the people who are supposed to constitute a team actually

accepting joint responsibility for carrying out together some significant work and joint responsibility for its outcome.

The interface at the village level (grassroots 'interface') must literally be a team; eg, four to five officers responsible for four to five villages.

Ideally the officers would be fully multiskilled but in practice we would have to accept that each would have strong points and weak points. It would be up to the team to help out as much as they could in which every village needed this help at any one time. In this process we would expect a growth in personal skills. We would also expect such a team to cover each other for absences due to holidays, sickness, continued education.

To start with, the 'officers' would be no more than the people recommended by the village for a slight upgrading of skills of use to the village. The intervillage teams would start from such selected people learning together at some district centre for a week or two, then subsequently by helping each other out in joint projects.

As an intervillage team started to emerge, the team would be given opportunities to improve their operation as a team and, in particular, to develop a social mechanism whereby they could set periodic goals together with the local council and the district coordination committee of departmental representatives.

Principle 2

The educationalists should accept that teams chosen for an area should design their curricula, decide what resources they will use and how, and decide when and where they do their learning. If some educationalists feel that they cannot go along with these decisions then they can stand aside.

The extension officers should be encouraged to do as much of their learning as possible on the job or at least in the villages they are going to serve. If in the villages, then as many villagers as possible should be included in each particular learning session.

In keeping with the way they are going to work, learning should be organised around self managing learning cells. Cooperation between teams should be practised between those having contiguous territories.

Principle 3

This invokes the broader principle of preserving the identity of the extension officer with his locality. Insofar as their work will concern agriculture, transportation, communication, commerce, medicine, as well as social organisation, they should be less prone to politicalisation than the North American 'community development officers'. Their career structures must allow for officers to advance by the process of broadening their skills (as a Boy Scout adds on his badges). This would mean continuous education for these people.

Establishing such a general purpose extension service requires, at least:

- . Getting it strongly sanctioned by national leaders - political and public service;
- . Mobilising PNG teaching institutions - possibly overcoming their rivalries through establishing a joint venture with a fair degree of independence. A search conference would probably be needed to achieve this and to firmly tie such a joint venture into the three principles enunciated above;
- . After the first three teams have been tentatively brought into being, the middle structure of district management should be tackled;
- . The scheme should not have its sights locked on the young, educated male.

What I have described in the Northern Territory and in Papua New Guinea are only small steps but it is a good place at which to conclude. Most of the designs I have mentioned are first steps or small steps. I know of no other way of advancing other than this step-by-step process of carrying ideas into practice. Elaborate theoretical or mathematical models of adaptive human systems are only a barrier to anyone putting ideas into practice,

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INDUSTRY COUNCILS - COMMENTS ON ONE ASPECT OF THE JACKSON REPORT

Fred Emery, 1976

The Jackson Report attached great importance to the Industrial Councils but did not attempt to give a blue print of how they might be staffed, their reporting channels and their modus operandi.

At the Sun City workshop* one of the three syndicates devoted itself to these questions and debated its views in two plenary sessions. This note is one person's perception of what was worked out.

Staffing of the Councils

We found it easiest to start with identifying what would not be satisfactory. A council made up of Ministerial appointees seemed too likely to be a tool or front for the Department and to be seen as such. An elected body seemed more likely to be independent and to be seen as more truly representative of the various interests in an industry. However, and quite apart from the messy problem of defining the electorates, we had some doubts about how long such bodies would remain 'truly representative'. International experience (Brady, 1944) suggests that very soon the big organizations would push for and win the commanding heights. No doubt they would welcome some continuing token representation of the small organizations and minority interests in order to maintain the facade. These token representatives are likely to be seen as Uncle Tom's by small business people etc, and encourage their apathy toward, and rejection to the Councils. The behaviour of these token representatives is likely to reinforce these trends. They will tend to regard themselves as a cut above their electorate by the mere fact of being elected to such auspicious bodies.

The candidates backed by the big organizations would soon occupy the key roles and probably, because of the patronage, they would act as a Shell representative, a Mobil representative, an AMWU representative or what have you, not as an industry representative. The implied risk is that the business of the Councils would be confined to horse trading and posturing, and much of the real business of the industry would still be conducted by back door lobbying.

* Workshop on the human and social aspects of the Jackson Report. Sponsored by Faculty of Commerce, University of WA, Sun City, Yanchep, 15-18 June 1976.

We sought very hard for some other way in which the Councils could be manned so that:

- . they could command the **respect** of Australian parliaments and the people because of their collective experience, knowledge and representation of the major interests directly involved in the industry;
- . they could command the trust of parliaments and the people because they were patently villain-proof.

I personally feel that unless both respect and trust could be ensured the Industrial Councils should NOT be set up. Councils that do not meet these conditions would be a misdirection of resources and a nuisance.

A promising alternative emerged. The principle involved is that which underlies our Anglo Saxon system for selecting juries and which has found other applications both ancient and modern (see next paper). It is the same principle that is used in probability mathematics to draw a random stratified sample that will represent a large and varied population. In order to get to grips with the practicalities, the syndicate at Sun City set itself the task of formulating guidelines that would help the oil industry set up an Oil Industry Council (three members of the syndicate had a good deal of experience with that particular industry). It seemed that:

- . some of the key parties in the industry can be readily identified; eg, the 9+ oil companies, their employees, unions, service station owners, NRMA and other consumer organizations, local governments in refinery areas, industry and government users;
- . representatives of these parties would have the responsibility of drawing up a list of directly interested parties (it was assumed that governmental processes would be responsible for looking after those less directly interested). This list would have to be acceptable to parliament and the people;
- . much of the parties would have the responsibility of creating an electoral roll of people in their strata of interests, and providing a publicly defensible explanation of their basis of choice. For very numerous strata, like users of heating oil, the list need not be more than a few hundred;
- . posts on the ICs to represent a particular strata are drawn by a random sampling technique, not by nomination and not by voting.

There are problems of details here, but let us first see what flows from the application of the principle.

One negative implication seems apparent - the outstanding individual cannot be selected out for special service and the incompetent passed over. This is inevitable. If selection from the lists is by a genuine random process then the dullest person on the list has the same chances of appointment as the most brilliant. In the systems of appointment and election it is possible that the best would be chosen more often than chance would have it. Possible, but not usual. In appointments, loyalty and such factors are generally of more importance than proven competence. In elections, popularity and strength of backing are critical and neither of these factors favour the tall poppies. For these reasons we were not over impressed by this objection.

On the positive side the 'jury system' appeared to have several things going for it:

- . the selected representatives know that they are on the council just because they are on the industry-strata list. A random selection procedure got them there so they have no grounds for self-delusion; they are still 'one of the old network' and can be expected to be treated as such. More than that, they are beholden to no one for their appointment or potential re-appointment. They have no patron; no party debts to pay off. He or she may not be the brightest person in the strata but at least they can participate in the work of the Council without having to follow outside instructions;

- . The Council will be more likely to be seen by Parliament and people as being their own selves. Their advice may be judged to be erratic, ill informed etc but there will be less of the suspicion that hidden hands have drafted the advice;

- . If such Councils exist to give public advice, then private lobbying channels are likely to dry up. Even if a parliament felt a Council's first advice was incompetent, it would probably feel happier about referring the matter back to the Council with guidelines as to what evidence it needed, rather than turn to lobbying channels that are ipso facto biased sources of information.

With these points in mind, one negative and three potentially positive, let us consider some of the obvious practical problems.

Initiatives and Reporting

Our feeling seemed to be that the Councils should, like statutory bodies, have the privilege of tabling their advisory reports in Parliament. It seemed quite undesirable that they report only to a department, or only to a minister, or to a cabinet. Only in this way did it seem possible that the Councils could avoid the suspicion of going into collusion with department parties or ministers' behind-the-scenes pressure on the legislature. The manner in which a Council arrived at its advice could be kept fairly private, but its advice should be open to public scrutiny in the parliament and the media. The government of the day would determine how the advice was acted on, but only in the knowledge that it was publicly known what advice they had received. If for some reason the Government needs private advice they have many other channels for getting it. We are simply suggesting that if the ICs are used for this purpose it would undermine their role.

It seemed to us desirable that any approved IC, be it regional, sectorial, state or national, should have equal right to table its advisory reports in any Australian Parliament, state or federal. This would require Federal-State agreement, but we did not feel that should be too difficult to achieve. Any parliament could ignore a tabled submission if it so desired. We felt that this was important because some matters that could arise in a regional council could have national significance, some matters of national importance might be particularly significant to several of the states.

We felt also that this was one way in which a network of councils could be established instead of the traditional hierarchies. It seemed to us that it could be only in the national interest if a regional - industry sector council could directly advise at state or federal level without being filtered through a next higher level council which would not necessarily appreciate their concerns.

Within this network of councils we would expect that initiatives could arise at any point. A parliament might refer a request for advice to any council that they thought appropriate. Ditto between councils. Councils might also in some way, query a parliament as to whether it would appreciate advice on some matter. (A thought: it occurs to me in writing the above, that we were in effect trying to turn the councils into creatures of the parliaments, not of departments, ministers, powerful manufacturing enterprises or powerful unions. This bothers me not.)

Reports that are tabled in our parliaments can easily finish up in limbo. Mr Fraser's recent innovation of the back bench committees suggests a way in which at least the major ICs might avoid that fate. Such a back bench committee that assumed a responsibility for an IC

would be a fair assurance that parliament, the minister or the cabinet did not walk away from serious, though controversial advice. The press would be a backstop.

Resources

To gain and hold respect, the ICs would have to mobilize resources that enable them to give advice that cannot easily be put down by Government departments or non-government interest groups.

The first question concerns their internal resources: what the council members themselves possess in terms of experience, knowledge and competence. This brings us back to the objection to random selection we outlined earlier. The first answer is just this: if the strata lists are built up on the system of the reference-jury list (see next paper) we can reasonably expect from probability theory, that any dozen will be pretty well as good as any other dozen that will emerge from random selection. To ensure the operation of this mathematical principle we must be prepared for councils of 20-40 members, so that at any one time each of the major stratas of interest has four to six members. This is still a workable number for the purposes the ICs are expected to achieve. We will discuss this below. Such numbers also allow for the overlap of service, and hence continuity, that we have in our Senate system.

The second question concerns 'owned resources'. We felt that each council should have a staff of resource people to service the council's meeting arrangements, its briefs for its own meetings and its briefs to other bodies. We felt, however, that the staff should:

- be minimal so that the cart should not direct the horse;
- be composed of people on secondment from the various strata of interest including governments for about two year periods, so that they could identify with the purpose of the council.

Arrangements would have to be made to ensure that satisfactory service on secondment counted for more, in terms of promotion, than a similar length of service in the 'home' organization. Hence that 'field service' would be eagerly sought.

The third question concerns 'accessible resources'. If the ICs are to be discouraged from building up their own staff empires they must have access to capable and publicly creditable sources of research. Our thoughts centred on the Jackson Committee's idea of a Bureau of Manufacturing studies and the Crisp committee's recommendation of an independent Australian statistician. We felt that all approved ICs should have the power to make reasonable demands on such bodies for collection and analysis of data. Beyond this, we felt that the ICs

should for most practical purposes be regarded as 'standing Royal Commissions'; ie, able to receive submissions.

If the ICs develop the standing with Parliament and the people that we expect, then they would not need to be endowed with the legal powers of Royal Commissions. Independent missions of enquiry into an industry would be needed only in the very rare instances where powerful groups in an industry were seen to be subverting an IC.

If a parliament is uneasy about the advice it gets from an IC it is still able to refer to other independent sources; eg, the IAC,

Modus Operandi

To be representative in the way we envisaged, the ICs would need to be of 20-40 in number. Only thus could we be assured of a reasonable quality of representation for each strata, and be reasonably assured that the representatives had not been seduced by special interests.

This ceiling number of 40 can work effectively, in my experience, at the primary task of identifying common interests, just so long as they do not try to operate via the traditional media of chairs, agendas, motions and voting on motions. To be effective the ICs would need to meet in a more open mode, probably less frequently than the existing Industry Panels, for a couple of days and nights at a time to thoroughly search out the emerging matters of importance in their industry, and frame their advice within the longer term common interests that they can identify. This might mean coming together once every nine to twelve months. It might mean more frequent gatherings if the particular industry is in a state of turmoil.

An IC will probably need an executive committee to carry on its work between its workshops/conferences. Again, to prevent the building in of biases, we felt that the executive committee should be selected by random selection processes, not elected or appointed. Thus each person knows that when their name is on an industry-strata list, they have a social obligation to serve a stretch on council if their number is called, and a further obligation to serve on the steering committee, if so rostered.

It seems unnecessary and undesirable to appoint an independent Chair from outside the industry. Such appointments would create a bias toward formality so that the Chair could exercise its assumed authority.

Conclusion

It was generally agreed in the syndicate that it was not fruitful for them to try and go much further along the lines indicated above. The next useful step seemed like that suggested in the Green Paper (p.221): appoint a working party in a couple of sectors and let them get down to work out concrete proposals suitable for their sector. It seemed to us that a lot of their learning could be carried over to the benefit of other sectors.

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THE JURY SYSTEM AND PARTICIPATIVE DEMOCRACY

Fred Emery 1976

The jury system is expected to yield a valid representation of what the community feels and thinks or wants in terms of justice, fair play and decency.

Their decisions can ruin a person's life career, inflict long periods of incarceration or even lead to the abrupt ending of a life. These matters have long been regarded as too serious to allow jury selection by voting and too serious to allow decision making in the jury by a majority vote.

If a jury fails to achieve consensus it is a 'hung jury' and it is dissolved, to be replaced by the original selection procedure.

This selections procedure has at least the following essential elements:

- . all adults have a duty to serve;
- . they are not selected by popular vote but by turns;
- . they cannot be lobbied as they are not viewed as representatives;
- . they must seek consensus.

The use of this procedure for determining government service would write off elitist assumptions. Such elitist assumptions are implicit in elected representative systems; eg, the evolution of the Westminster system. Some people assume that they are better fitted to rule by reason of birth, property, education etc. The elected regard themselves as a cut above others.

Notes on 'Jury System in politics'

1 As with the legal jury system, some people are ineligible for the lists because of age (immaturity), insanity or criminal record.

2 Once nominated by ballot there must be a 'posting of bans' (as with weddings). If challenged an open public hearing must be held. If a majority at that meeting vote for or against the nominee it is open to either nominee or challengers to demand a secret ballot by their community. This may seem expensive but it seems improbable that more than a small minority of nominations would be challenged. Thus the total cost should be very much less than holding general elections. Even the cost question is not critical. The overriding consideration is to prevent stacking of public meetings to manipulate the appointments

by special interests favouring or prejudicing the chances of service of a nominee for their own ends, not community ends.

3 It is an important feature of this procedure that it weakens the role of political parties. The majority of the candidates would be beholden to no party for their election, nor for their future. The parties might for a while campaign for challenged members but that would bring them little credit.

4 As compensation for service and an aid to readjust to private careers persons would have the right to as many years of education at state expense as their years of service.

5 The levels of government might be:
 . collective (urban or rural, 300-500 adult voters) or some
 1,000 persons);
 . region;
 . state.

Sampling frame

		Sampling ratio	N
Federal/State	all who have held regional office		
Regional 200,000	all who have held town-district office		
town-district 10,000	all who have held town-district office		
local (500)	complete electoral roll of the locality	1:100	5

Note: Using this sampling method for representation should ensure that women are properly represented right to the highest level; ditto for all minorities.

Nomination to higher office should be restricted to those who have served in lower officer. If their service was not well done they could be challenged.

Two-up, one-down

Election to Local level should mean one year as assistant at regional, then back to local service. Ditto for other levels.

The 'two-up, one-down' principle

The purpose of this is to bridge broad gaps in extent or span of concern. By participating in a meaningful way in the policy formulation at the broader level (without the responsibility of making the decisions) people can get a greater understanding of the context in which they will subserviently be contributing to decisions at the borrower level.

Thus, for example, by understanding the limitations to the powers of Federal and State governments, and additional demands on them, the regional 'public servants' can be more reasonable in their requests of those bodies.

In effect it helps create a shared psychological field between bodies whose prime concerns are different. They should realize that the different and potentially conflictful ends are being pursued by people at least as honourable as themselves.

Note: the interpenetration of levels will also occur because after service at any of the broader (higher) levels a person is still likely for subsequent selection for the lower levels. These people may not be numerous but would be valuable resources for any governing body. At the narrower levels of locality and town-district, people should be so familiar with both levels that this mechanism may not be required. This familiarity is not likely, however, when a person moves to the regional level and has to deal with region-state and region-federal interfaces.

Precedents

This notion was inspired by George Collier's account of the traditional system widespread among the Indians of Mesoamerica:

The positions (of public service) are ranked into levels, service in all but the first level presupposing earlier services at the level below. Every mature male is expected to provide ritual service for the community at some point in his life by occupying a ritual position as the lowest level. During his year of service, the man will leave his hamlet to live in the township center to perform ritual at great personal expense. The heavy cost of this ritual requires years of careful savings of the meager excess earnings of farm production above subsistence

needs. Yet the spiritual and social rewards of service are such that many seek subsequent service at additional heavy cost in positions at higher levels of the hierarchy later in life. Indeed, those men who succeed in performing at all of the hierarchy's levels have proved themselves worthy of the greatest respect.

Fields of the Tzotzil, 1974
University of Texas Press, p.13)

Among the Pathans there is another variant of participative, non Westminster democracy:

The *jirga* is probably the most interesting of all the Pathans' institutions. It can best be described as an assembly or council, and it serves the functions of both. The word can be applied to half a dozen men sitting down together to discuss what they should say to the political agent who is coming to object to their sons shooting off the porcelain insulators from the nearby telegraph line.

More properly a *jirga* is a group of members of a particular sub group of Pathans considering a matter of common interest. There is seldom any formal selection of representatives. Among the tribes virtually every adult male may attend. Among others tradition clearly indicates those who are entitled to participate. In any event there is no making of motions, and no voting. Decisions are unanimous and are arrived at by taking the 'sense of the meeting'. (Some of them would chill the blood of the peaceful Friends who coined the term.) The traditional penalty for anyone who defies the decision of a *jirga* is the burning of the culprit's house. Since the tribesmen do not lay aside their arms while deliberating, punishment can be executed promptly.

Apart from enforcing its own penalty for contempt, there is little of the judicial or police function in the *jirga's* role in the community. It does not ordinarily determine guilt or inflict punishment but seeks to achieve a settlement.

(Spain J W 1962, *The Way of the Pathans*,
Karachi, Oxford Uni Press, p.50)

Other examples could be drawn upon, and I hope to write about these in the near future. My point here is to emphasise that democracy did not begin with Westminster. Further, they were models that sought for participatory democracy.

The evolution of the Westminster model, however, has been a history of giving way to popular demand but seeking to hold participation to minimum.

Misrepresentativeness

My concern about the utility of the Westminster system of representative government is twofold:

It **always** leads to a misrepresentative elected body. More men than women, more rich than poor, more lawyers than business people, more farmers or workers etc; it inevitably acts to dampen down participation (See first paper in Part III).

The kind of representativeness that we could find in the 'jury system' type of government is clearly explained by a US Supreme Court judgement of 1957:

The American tradition of trial by jury... necessarily contemplates an impartial jury drawn from a cross section of the community. This does not mean, of course, that every jury must contain representatives of all the economic, social, religious, racial, political and geographical groups of the community... it does mean that prospective jurors shall be selected by court officials without systematic intentional exclusion of any of these groups.

(Bloomstein M J 1968, Verdict: the jury system, pp.54-5, NY Dodd, Mead & Coy.)

I think I have indicated my preference for a random sampling procedure from an up-to-date list of all eligible adults. However, in many circumstances this may not be the best solution. The cost of creating and maintaining such a list of citizens can be exorbitant in an underdeveloped country; it may be too much trouble to contact and gain the cooperation of a randomly selected sample even in matters of life and death in a highly developed country, with cars, telephones, etc.

This problem has been faced by the US Federal Courts. The methods of federal selection includes recommendations by leading citizens of the community, known to court officials for their good character.

The social reference system is one we have used for three community and one university Search Conference. On each occasion it yielded a sample of citizens that could not be faulted because of misrepresentativeness.

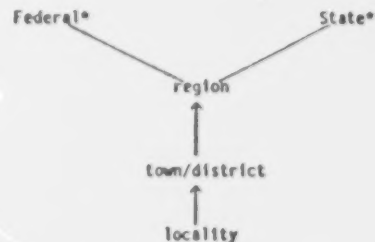
Appendix: Logistics

An Idea of the Sorts of Magnitudes That Would Be Involved in Australia

Size of Unit	Size of "Electorate"	States	Number Regions	Sub-Units Included Towns/Districts	Localities	Rate of Sampling at Each Level	No. of Reps. per Unit	Approx. No. of Level Reps. in Nation	Time Committed
A. Federal 16,000,000	8m	7	64	1,600	16,000	1 in 120,000	142	142	Full
State ^a 3,000,000	1.5m	-	12	300	3,000	1 in 30,000	50	350	Full
Region 250,000	125 thous.	-	-	25	250	1 in 2,500	50	<u>3,200</u>	-
Town/District 10,000	5 thous.	-	-	1	10	1 in 250	20	<u>32,000</u>	-
Locality 1,000	500	-	-	-	1	1 in 50	10	<u>160,000</u>	-
(*Median Sized)								<u>196,000</u>	
								i.e. 2.4% of "electorate"	

B.	Initial Rate of Sampling per Electorate (Voters)	('2 up * 1 down')	Length of Tenure
Federal	<u>142</u> 1 in 2.5) 350) 1 in 6	X	4 years
State	<u>350</u> 1 in 11) 3,200	X	4 years
Region	1 in 10	X	3 years
Town/District	<u>28</u> 140 1 in 5		2 years
Locality	1 in 50	-	2 years

C.



*Note: no one gets to this level without 7 years of public service (as distinct from public administration).

PART IV. IN EDUCATION

The education system is always a target for change in people's minds but it has for many proven a disappointing or illusory one. It can, however, provide opportunities for learning about the adaptations which are the focus of this volume. There is no longer any doubt about this, and besides, our preschools, infants and primary schools have been showing the way for years.

There is some considerable doubt though that many of the vocal critics of the system will accept the sort of structures and processes which are advocated here. They appear not to be what they had in mind. In the great education debate, it seems to be very much a case of either throwing good money after bad because it used to work well once, or letting the little darlings have their head. This is the education system's version of autocracy versus laissez-faire.

The first option, an updated version of more of the same as in changing the curriculum, focusses only on the content, ignoring the structure and process. But people are quick to recognize the message in the medium and even the most enlightened, democratic message will sink without trace if delivered from a vast psychological distance.

The second option flies in the face of everything we know about human needs for belonging with some sense of stability and control. Uncertainty breeds the group dynamics of dependency and/or fight/flight, thereby reducing learning.

This tug of war for change (during which the status quo marches through the middle) is a reflection of the inadequate dichotomy of structured and unstructured learning. There is a third alternative but why is there this reluctance to make fundamental (neither more autocratic nor laissez-faire) change in our secondary and tertiary systems? Why should adult educators be left to rehabilitate the victims of the formal reward and punishment systems which pass for education? When we don't have to produce them in the first place?

The major part of the answer to this question was presented in 'Educational Paradigms'. In this part we show that this theory is eminently translatable into a range of educational practices, particularly when it is integrated with the tools and methods developed for participative democracy. This applies even in the turbulent phase which encompasses adolescence, the high school or junior college system. As the last major training ground for the academic tertiary sector, it has already proven a weak link in the entrenched, bureaucratic system. It is here perhaps that we can establish the required debate about 'structure', based on some experience and free from conceptual confusion.

We have now accumulated considerable experience in the strictly adult realm. Both Emery (M's) training workshop on the theory and practice of Search Conferences and the participative courses, workshops and conferences of Davies are designed to convey both conceptually and experientially the second paradigm in all its aspects.

The Search Conference training workshop is designed to be a first step in the learning process for those who wish to become effective process and structure managers. It covers the minimal specification of the interdependencies of concepts, design and management and alerts the apprentice to their practical, human and organizational consequences. Those who wish to learn more will actually have to do it in practice, become apprentices and learn on the job.

'Multisearches' then describes the latest attempt to extend the Search Conference from its usual upper limit of about 35 people and analyses the role of the critical variable of tight coordination of the managers throughout the event for success. This should not be interpreted as autocracy. It is an expression of the care which must be taken if people are to experience a positive and constructive example of democratic working. Managers of these complex learning events carry the responsibility for transmitting the democratic virus. It reinforces the message that participative democracy is as structured as, and in fact requires more planning and organization than, bureaucracy.

Davies documents his broad ranging experiences with introducing participation and self management into previously, traditionally taught educational events. The result of this massive body of experience is a set of unsurpassed, practical guidelines. There is nothing quite so traumatic as a failure in one of these major events but many risk this experience by trying to reinvent the wheel. We may be able to prevent some of this if there is a well established and understood conscious knowledge of reliable methods translated from good theory.

Because Davies has pioneered participative methods in areas which were previously the province of the first paradigm, we realize again how silly it is to continue with teaching in the bureaucratically structured classroom as the primary vehicle. The practical wisdom covered in his paper makes it clear that the second paradigm is applicable in all our educational systems and efforts. Apart from all these conceptual and practical understandings, all that is required is a little faith in the intrinsic ability to learn and purposefulness of our species ('People aren't stupid, you know').

Most efforts at education change have been designed at the structure/process level and have not really attended to the underlying epistemology. This must now be a priority. It would be a tragedy indeed if education, particularly of the young, was to be the last line of resistance to participative democracy. Can we really afford to

continue perpetrating the myths that education must comprise an asymmetrical relation for information transfer and that people's experience is less valuable than the 'knowledge' stored in our educational warehouses? If this part does nothing more, it should reassure you that there is a more democratic and learningful alternative to our major current form of education.

AN INADEQUATE DICHOTOMY - 'STRUCTURED' vs 'UNSTRUCTURED' LEARNING

Fred Emery, February 1978

A good deal of debate continues to go on about the relative value of structured and unstructured learning. The former tends to be identified with the traditional classrooms modes and the latter with modern forms of person-centred learning. The debate has not been very fruitful. One side becomes fashionable and then something like Sputnik happens, or youth unemployment and the other side becomes fashionable.

I suggest that some of the troubles in the debate stem from the very use of the term structure. We assume that when we use the term structure to describe properties of social groups and events we are using it in the same way as when we describe the structure of a building, an anatomical structure or the structure of a molecule. Pressed hard we might admit that it is only an analogy, but then insist that it is close enough to permit us to make rigorous statements about social structures. This is far from being the case. When we are describing the structural properties of physical systems we can and do refer to geometric, kinematic, mechanical, physical or morphological properties (Ackoff and Emery, 1972, p.18). (Note that 'morphological properties' refer to "a set of physical properties - each the same function of the same geometric, kinematic, and basic mechanical properties" (*ibid*, p.17). In this usage, structure is the opposition of function. When we describe social structures we are not describing something that is contradictory of function, and nor can we ever hope to do so because "Organizational structure is a **functional** concept describing the allocation of choice... determination who is to be responsible for what... determination of which parameters of choice should be influenced by whom (such as staff functions)" (*ibid*, p.222).

If we use the term structure in a way which is appropriate to social structures then there is a clear sense in which a learning process can be described as 'structure-less', namely, when there is no attempt to develop or maintain a division of labour. This we would normally describe as a laissez-faire setting.

Ambiguities emerge when we look at the other end of the implied scale, structure. People usually tacitly assume that there is only one possible form of structure, one kind of division of labour, in learning processes. Elsewhere I have shown that there are at least two basic designs for social structures. Thus degree of structuring can be measured on either of two dimensions, not just on one. If this is not

recognized in debates about the structuredness of learning settings then misunderstandings are inevitable.

As an example we can take our Centre for Continuing Education experience with both the DHRs (Development of Human Resources) workshops and Search Conferences. It is not unusual for people, experiencing these learning events for the first time to express a desire for a little more structure. This usually means that the person has been so accustomed to the transfer of knowledge being done according to the first basic design, teacher setting pupils their tasks, that they have some craving for this sort of protective dependence. The same requests could have a very different meaning when the person accepts learning in a type 2 design, within which DHRs and searches are construed. (When social scientists or management consultants start by taking 'social structures' as the given it is quite clear that they have ruled out of order any question about whether a better form of division of labour might be considered.)

Let us consider what structuring means in this latter context. It is clearly not the sort of structuring involved in a university course or a consultant's package. It is not a predetermined set of lectures, exercises, individual reports and assessments. Less detailed structure is imposed but there has to be some structure imposed to ensure the best division of labour between the time that is spent on the necessary phases of the work and the time spent in plenary, in parallel groups, specialist groups or in receiving expert individual inputs. To a much greater degree than the ordinary teacher, the managers of DHRs and Search Conferences have to monitor and revise their initial proposals for structure (division of labour). To a much greater extent they must seek to alert participants to 'what is involved and what is to be expected'. Without this, expectations about what the group will choose to work on and how quickly they can get to grips with the task are likely to be much awry.

Problems of achieving optimal structures are to be found regardless of whether learning settings are designed according to the first or second design.

In the first design there are always problems of how much to leave to the student and of allowing for differences between students.

In the second design there are no standard modules of individual curriculum-task. At best, there are some benchmarks derived from experience of what some kinds of groups can and cannot do. This kind of generalization can be dangerous; eg, the 1976 Search Conference where a quite unique group were brought together about an unprecedented task (M Emery, 1982). The allocation of tasks to individuals is the structuring that must be left to the plenary or

working subgroup; and is usually no more formal than allowing or drawing individuals into making a contribution.

The managers of a search conference have the difficult task of advising the group how they can best divide up their shared time; when they have arrived at a point where they need to test out apparent subgroups; ie, subgroups working independently from premises formulated in plenary; when they are secure enough in their shared premises to separate into special interest or skill groups and use their special knowledge for the furtherance of the overall concern; when they could be best served by a presentation from an expert individual; when the subgroups should come back into plenary; when all should take a break from formal work to relax or engage in informal discussion; when they should work into the night. These are all structuring decisions, and the list is by no means exhaustive. Many of these decisions can be embodied in the original design, but only tentatively.

The conference managers cannot avoid taking major responsibility for these decisions and for ongoing revision of the initial design. Coming back to the point raised at the beginning of this chapter, it will be seen that the successful design and management of a search conference derives primarily from achieving optimal structuring not from trying to maintain a state of minimal structure.

If we probe a little deeper we find that contrary to superficial impressions the most likely error of search conference managers is to overstructure. The reason is quite simple. If the conference is allowed to idle along in a particular phase, because the manager has not sensed the need for restructuring, this may be an irrecoverable loss of time. (The commitment of people to a search conference practically always entails a non negotiable end point in time.) On the other hand if the conference is too quickly taken through a particular phase it is always open to the suggestion that they recycle through that phase until they have done the work properly. To ensure a good outcome it will always be tempting to err on this side; ie, to overstructure. Note that this is not at all the direction of overstructuring that a teacher is tempted toward in the design 1, teacher-pupil learning setting.

In both designs 1 and 2 the error of over structuring generates a student or participant reaction. In the first design this may not be apparent until there is a student mutiny. In the second design there is usually early warning, before too much alienation has occurred, because the group and the subgroups already have legitimation in the learning process and it is not mutinous of them to assert a group view.

Addendum - on definitions

It might be thought that the ambiguities in the word 'structure' arise simply from the particular definitions that Ackoff and Emery chose to put forward in 1972. If the rest of the text, and in particular, the discussion of 'division of labour' (pp.222-27) have not dispelled this doubt, then it is worthwhile consulting the dictionaries to appraise the diverse and changing meanings of the word.

The use of structure to refer to function is clearly made in Websters Unabridged, 1890.

"Structure... (L. *structura*, from *struere*, *structum*, to arrange, build, construct...)...1. The act of building..."

Definitions 2-5 refer to structure as we have defined physical structures.

In 1970, SOED, we find that the first meaning is then "Now rare or Obs." However, they proffer a sixth meaning, illustrated by "The general law of organization...is that distinct duties entail distinct structures. SPENCER." Obviously the functional meaning lingers on, although the illustration is rather dated.

Websters Unabridged, 1961, found they needed 57 lines to define structures as against 21 in 1890. There was no added space given to the first usage "the action of building"; the expansion was in the scientific usage. However, a new 19 line entry occurs for structure as in "structured, structuring". It is devoted to usages of the word 'structure' where allocation of functions describes the structural relations between people. There is no parallel development in SOED.

In Britain the scientific usage has gone further in displacing the meaning of structure as social function. This probably does no more than reflect the extent to which different social functions have been frozen into structures in that country - at least in the language the educated Britons prefer to use. The entries in the 1961 Websters for the new term show a clear bias to recognizing what is behind the structure of interpersonal relations.

References

- Ackoff R L and F E Emery 1972, On Purposeful Systems, Aldine-Atherton, New York.
- Emery M 1982 Searching, Centre for Continuing Education, Australian National University, Canberra.

Emery F E 1977, 'Two basic organizational designs', in Futures We Are In, pp.91-100, Leiden, Martinus Nijhoff.

A TRAINING WORKSHOP ON THE THEORY AND PRACTICE OF SEARCH CONFERENCES

Merrelyn Emery, 1987

This workshop is designed to provide a basic appreciation of both the theoretical and practical dimensions of the Search Conference. It includes, therefore, a conceptual presentation and an experience of the first phases of the process. During the experiential component the reasons for the manager's comments, questions and moves are briefly mentioned to give a broader base of understanding of the approach as a whole and as a lead into deeper questions and discussion.

It is always difficult to fully integrate conceptual and experiential sections, and their quite different dynamics, within a single exercise. Too long a top-down presentation at the beginning will induce dependency which subsequently interferes with the growth of the working mode demanded by the experiential component and the longer and more powerful the working phase, the less participants can be bothered with subsequent theoretical discussion. Therefore, one of the skills required for a successful workshop of this type is to keep each component short, concise and with many leads and pointers backwards and forwards into other sections, creating both continuities and 'zeigarniks' (bits of unfinished business). Another is that required in the management of the Search Conference itself, namely, to hear the operating dynamic, the 'music' or second level message of the group and manage it towards the most creative learning.

Above all, it is necessary to stress the difference between the workshop and the Search itself and that the workshop cannot model the coherent dynamic of the Search Conference. There is a paradox here and it is not resolved until those who wish to learn more take the next step of becoming an apprentice.

While some of the components must be conceptual, they must also be presented in ways which encourage interest and learning; with such aids as overheads, illustrative butcher's paper and invitations for participation through questions to clarify statements made. Extended question and answer sessions must be avoided as these reinforce any emerging assumption or dynamic of dependency on the 'expert'. Above all, these top-down components need to radiate the excitement the presenter feels about the Search Conference itself. This cannot be simulated and if it is lacking, such a workshop, and certainly, the management of a Search Conference, should not be attempted. As will be clearer below, the method is predicated on people as whole systems living within bigger whole systems, within even larger whole systems. Participative methods in general, and the Search Conference in

particular, cannot be approached with a view of people as uneasy amalgams of cognitive, affective and conative subsystems. The method is designed on and illustrates the efficacy of Open Systems.

It is also necessary to stress here that these workshops can be no more than a brief introduction to the Search Conference, its theory and practice. Learning to run a successful Search necessitates moving in two directions:

- . gaining an adequate working knowledge of the theoretical substratum of the method through reading and discussion;
- . serving as an apprentice or trainee manager for as many events as it takes to feel confident with the phenomena embodied and style required. People differ in this but intuitively, both apprentices and managers know from the beginning whether a person is 'a natural' for the job.

These two simultaneous directions can actually be handled within the apprenticeship system as is usual in other fields and the rationale for doing both is as for other fields of learning. Routine practice without conceptual understanding becomes rigid and dangerous, especially when dealing with people who are unpredictable at the best of times, but even more so when they are working creatively with new problems in changing circumstances. The workshop must stress that it is only a toe in the water to allow people to get a feel for whether or not this type of work is for them.

The actual plan for one of these introductory workshops depends on the time available and the number of participants. It cannot be done in less than three hours, even with a small group, but can be expanded quite significantly to limits not yet tried in practice. A fairly comprehensive overview of concepts and practice is possible in about seven hours. If time is short, various components are run together, demanding good understanding, issue prioritization and time management by the manager.

Theoretical Framework and Concepts

The Search Conference is premised on two basic assumptions:

- . people are purposeful and can be, in certain circumstances, ideal seeking;
- . people want to learn and create their own futures

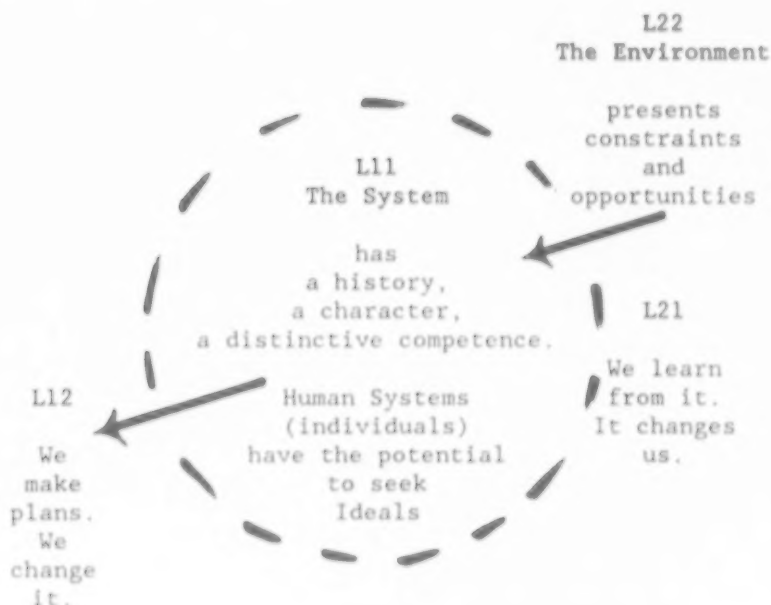
Five primary purposes are discussed:

- . participative planning and policy making;
- . effective implementation of the above and its relation to the term Active Adaptive Planning;
- . learning;

participative democracy; and
the joint outcome of the third and fourth which is Puzzle
Learning in non-dominant structures.

The overall framework of **Open Systems Thinking** is explained and its relation to the phases of the Search Conference elaborated as in the following diagram.

Figure 1. Open Systems Thinking



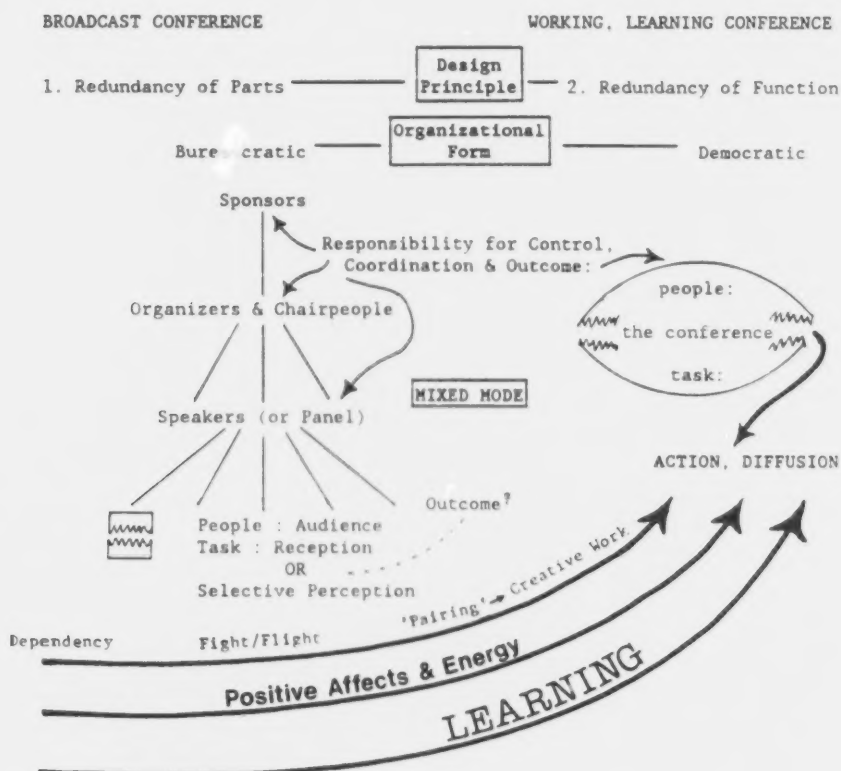
The L in the figure refers to the fact that both system and environment are governed by lawful processes and that there are lawful and able-to-be-known transactive relations between them; where L21 expresses the effects of the environment on the system and L12 expresses the effects of the system on the environment. Each element must be contained within the work of the Search Conference if it is to be comprehensive and result in effective planning. Constraints and opportunities will translate into different questions for each custom designed event but will be present in some form.

The Search Conference is unique as a planning method in that it addresses the L22, the broad environment, its internal dynamic of interdependencies and change. Without knowledge of this component

of the Open System it is possible to make plans which look beautiful but have no chance of implementation. The L22 is a ground of value shifts and sometimes, sharp discontinuities; a mine field for planners who follow linear logic and/or concentrate on the L11 and the L12.

Other concepts are then introduced through the following overview.

Figure 2. The Dynamics of Conference Design



Design Principles

These two basic principles, **redundancy of parts** and **redundancy of functions** underlie both organizational and conference design (as a conference is only a temporary organization) and determine its structure. A decision at this level will have profound implications for the outcome of the conference, the amount of learning it generates and its diffusive potential which is a flow-on from the emotional tone of

the conference and its energy level. A Search Conference is so far, the most internally consistent method designed on the second principle. This reinforces the notion of the workshop as a paradox as the workshop is an example of the **mixed mode**, something a Search Conference manager avoids.

Group Dynamics-the group assumptional and working modes

Wilfred Bion discovered that when people come together in groups, they make assumptions about how they will need to behave in order to protect or secure the group as an entity. If the managers of an event give cause, by designing or behaving according to the structure portrayed on the left of Figure 2, the group will enter a state of **dependency**. They assume the management is prepared to be a great and powerful leader who will take responsibility for their behaviour and this absolves them from any responsibility to learn. Therefore, very little learning takes place in this mode.

The assumption that there is a leader or force which aims to destroy the group results in **Fight-flight** which may be expressed either as fighting behaviour or as passive resistance. This is most likely to occur in the mixed mode but these days is also sometimes seen in pure cases of design principle 1. Since Bion's times we have witnessed a growing awareness of the right to participate and an outright denial of this right, as often occurs in conferences with a packed program of speakers and little time for discussion, can spark dramatic episodes of fight-flight. More learning is achieved in this mode than in dependency as there is at least an active orientation, but the task to which the group addresses itself is that of removing the threat, not that around which it cohered.

There are still conflicting opinions about the nature and meaning of **Pairing**, the third assumptional mode. It can be a prelude to the **Creative Working Mode** but it can also serve as a diversion to the task whereby the group shifts its attention to a sub-group or pair.

The Creative Working Mode is most likely to occur when a group is carrying full responsibility for the control and coordination of their work towards their agreed purposes. In fact, once this mode has been established, it is very difficult to stop it and managers who feel the need to decelerate or reverse it can find themselves in a great deal of trouble. In this instance, fight-flight is no less an intrusion on working towards the task, but it is more in the interests of the mature, responsible group.

A Search Conference manager will have designed the process to avoid outbreaks of the group assumptions and should be trained to recognize them should they occur. ~~She~~ ^{He} who needs the practical skills to redirect

the conference back into the working mode before the assumptions become entrenched.

The Experience

This bare outline needs to be followed immediately by a preliminary experience of the first phases of the Search.

Setting the Scene

The group is asked to see themselves as the appropriate people to take responsibility for making long term plans about organization or venture X, depending on the nature of the group. This book is an important introduction to the group decision making process. The steps of preparation and planning which precede the actual event of a Search Conference are discussed and their importance stressed. Selection of participants so that they cover all aspects of the puzzle to be solved, is inevitably a crucial factor in a successful outcome.

When the scene is set, participants then receive a standard briefing for the first phase of the Search which is data collection of changes taking place in the extended social field or environment, leading to the preparation of desirable and probable future scenarios. The rules and rationale for conduct of this phase are briefly explained before and during the session so that participants begin to get a feel for the job of the manager and the care which must be taken in regard to the subtleties of human communication. (In no way, however, should these elucidatory comments slow down the momentum building up in the group, and if there is any risk or sign that they may do so, they should be left out and returned to in the final wrapping up stages.)

Then after self-selecting into small groups, the participants synthesize their data, from their own data base and values into desirable and probable scenarios. These become the benchmarks for measuring progress during the rest of the conference; eg, will that strategy really get us further towards that desirable future?

After the groups report these scenarios, they are discussed and negotiated to the point where each is accepted as the property of the total conference. This point in the process can generate a lot of learning. Many people are challenged as they have to explain the values and reasoning which lie behind a particular decision and nobody can hide behind position, authority or status as all participants attend just as people with something to contribute to the puzzle solution.

Negotiating skills are also learnt here too, very quickly in some cases. As is dealt with in more detail below, one of these involves learning the difference between the faddish concept of 'consensus' and the

much more realistic and durable concept of 'rationalization of conflict' - agreeing to differ about some things while working together on those matters which form the common ground.

From this point, the experience is continued or curtailed, depending on the time available. If it is available, it is useful to move into the phase which embodies the LII; the other aspect of the context for the creative planning work which is the ultimate task, and which illustrates and reinforces some other features of the method and its underlying theory.

This phase is usually referred to as the History session as a brief run down of the history of the organization, industry, community or X is necessary to ensure that all participants share perceptions of the past as well as the future. Many participants have little knowledge of where X has come from and there is often intense disagreement about critical turning points amongst those that do. Regardless, the overriding significance of the history session accrues from the need to build into the future those continuities that have been appreciated and mark the character of X. Without them, there is little chance of implementation. These continuities define what people recognize and feel they belong to and their absence in the bureaucratic standard plan heralds its demise in an outburst of either active or passive resistance.

Integrating Theory and Practice

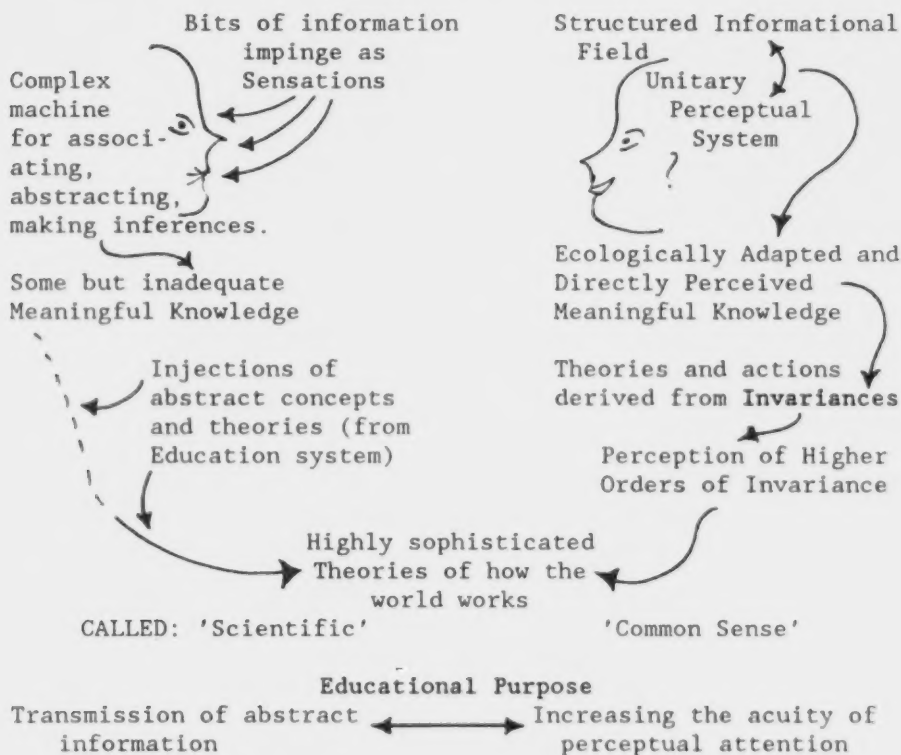
At whatever point the experiential component is left, the remaining time is used to outline the rest of the process as it would probably happen, deal with the many questions which will be certainly raised by participants and highlight other concepts employed. To all extents possible, it is better to discuss novel concepts in the context of questions asked and to get participants to reflect back on how they actually went about the work they did.

Other Concepts which must be Mentioned

Underlying theory of learning
Ecological or direct perception

Figure 3 illustrates the difference between the theory of learning which guides the design and operation of our formal education system with its emphasis on **teaching**, and the Search Conference which takes as its basic unit 'people **learning** in environment'. A quick referral back to Figure 1 shows that Epistemological Paradigms 1 & 2 are the educational foundations of Design Principles 1 & 2, and that the Search Conference integrates through its process and structure all the elements necessary for a full scale learning experience of democracy.

Figure 3. Epistemological Paradigms



Contrary to traditional beliefs about discrete bits of sensory information impinging on the central nervous system and requiring integration before meaningful knowledge is available, the perceptual system acts as a unit absorbing meaningful knowledge directly from the informational structure of the environment (see Educational Paradigms herein). From the first session of the Search, participants draw on their perceptions of the extended social field, their first hand knowings of the character of their organizations and much else. Synthesizing these into scenarios is an example of collectively pulling invariants into sophisticated but highly realistic theories.

Having meaningful knowledge directly available from perceptions applies as much to our knowing of those around us as it does to our physical environment, as Bion's work shows. Because of our traditional Western theories we may not have learnt to be aware of our awareness of this knowledge but the process of the Search Conference itself shows that it is there. The speed with which a group assumption appears in the total group leaves no doubt that all are aware of what is going on. In any social setting we can see people going through

elaborate although subtle rituals to learn as much as possible about those they are with.

Through the life cycle, our knowings accumulate and become more differentiated as they also become more abstracted but the sophisticated theories we derive may be various, depending on whether they are primarily derived from taught, conventional 'wisdoms' or from first hand experience. The Search Conference is, therefore, an opportunity to regain some faith in the validity of our experiences, knowings and commonsense, practical theories of how the world works.

Figure 4.

The Properties of Influential or Effective Communication

Theoretical	Design & Management
1 OPENNESS . for exploration and checking . about differences in perception and opinion	Pre-briefing, content and process participative. Clarify our roles and values. Means used are visual, verbal and vernacular. All recording by butcher's paper.
2 A MUTUALLY SHARED OBJECTIVE FIELD 'We all live in the same world' . it is commonly perceived . against which joint actions are considered . taking into account the interdependencies	Scan the external social field with ground rule. . all perceptions are valid Analyse and use throughout as benchmark.
3 BASIC PSYCHOLOGICAL SIMILARITY 'We are all human with the same human concerns' . each is an action centre in the environment . each can learn from the other . can talk to each other as equals (humans)	Provide opportunities for confirmation (common ground). . desirable futures based on ideals. . these as basis for co-operative, creative work towards purposes. The 'rationalization of conflict'.

(continued .../)

4 TRUST: THE EMERGENCE OF INDIVIDUALS AS OPEN SYSTEMS

- . will initiate communication with the other
- . builds self-confidence; therefore vicious cycle
- . results in genuine conversation, work and learning
- . generates energy
- . leads to diffusion and action

No status difference between management and participants.

No management interference with content.

No status difference between management and participants.

No management interface with content

Maintain conditions for all of the above.

TRUST ---> COLLABORATIVE ACTION = F (1,2,3)
+ DIFFUSIVE LEARNING

The set of guidelines in Figure 4 for the practice of Searching is a modified version of Solomon Asch's original learnings in this area.

Figure 4 lists the four necessary conditions for effective communication and the ways in which they have been designed into the Search Conference structure and process. Any behaviour, particularly by managers, which disturbs these conditions can spell trouble for a Search Conference and managers must also ensure that other participants observe the principles.

For example, we are often asked why individual note taking for reports is discouraged and butcher's paper is so important. Basically, this technology sets the scene by reassuring everybody that things are what they appear to be and there will be no manipulation of the content or process. In this dimension as in all others, there must be a high level of consistency.

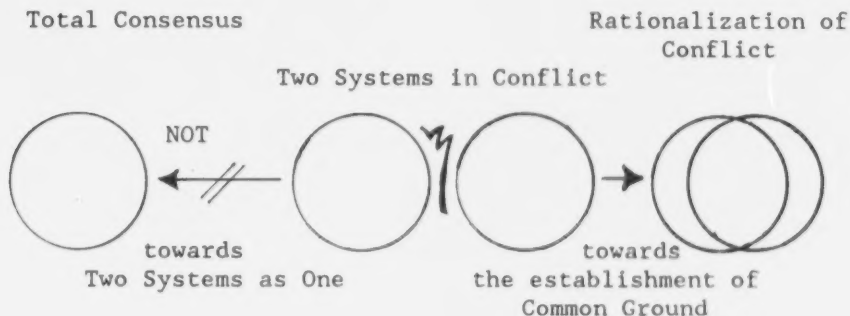
Diffusion

This has been long misunderstood or its dynamics underestimated. Diffusion is much more a psychological process than a mechanical one of spreading information by various media such as paper or spoken words. It is as much the communication of energy and enthusiasm, generated by the emotions of excitement and joy that drives diffusion as the importance of the content of the 'message'. When people are really 'working' towards their purposes they generate high levels of excitement and joy and a successful Search Conference can immediately be identified by these characteristics. This energy is contagious and is also the driving mechanism for the implementation

of the plans. This effect accounts for much of the diffusion of the concept of the Search Conference itself.

The Rationalization of Conflict

Figure 5. Dealing with Conflict



The complex realities of the world in which we live renders a simple dichotomy between conflict and consensus an impossible dream. Thus, the 'resolution' of conflict is really not a goal. Above all else, the Search Conference aims for realistic working relations and does NOT, therefore, aim for consensus, although it is a bonus if it can be temporarily achieved. It aims for the rationalization of conflict as it applies to achieving the purposes of all parties in the venture, not only in the short term but the long, as they will need to continue on working, negotiating terms long after the event of the Search is past. Figure 5 expresses the difference between consensus and rationalization.

Some level of common ground can almost always be validly achieved through exploration of areas which lie outside or on the periphery of the conflicted issue, and the first level of agreement is sought in basic ideals. Once this ground is secured, it may be possible to find ways in which the parties can work to enlarge its sphere. It should always be remembered that there will be limits to this as some parties must, by definition, play adversarial roles. They can and do, however, often cooperate on significant matters of legitimate interest to both or all. The Search works by seeking indirect strategies negotiated agreements, broadening the sphere of concern surrounding the conflict and then enlarging the area of agreement.

It is our experience that the area of common concerns and agreement is always larger than either party or interested outsiders supposed. That it is often so much larger than the stereotypical view is itself a significant learning experience and a levelling one.

During the process of implementation

it is important to maintain the nature of the process of the Search. So many, once the event has finished, return to the time-honoured formalities of appointing or electing a chair, rules of debate etc, only to find that there is a wholesale return to the territorial bickering, refusal to address the primary issues and, therefore, a wastage of the gains made during the Search Conference. All of this latter is totally unnecessary but its avoidance lies in the understanding of the dynamics discussed above.

The Strategy of the Indirect Approach

The Search Conference is of course designed to utilize this concept as it progressively secures common ground as it zeros in on the issue. Basically, the Indirect Approach attempts to maximize gains and minimize losses. There is little point in storming the barricades; better to encircle the enemy, preferably from within, but in this case as the enemy shares your purposes, it is necessary to circle each other seeking a win-win.

The Indirect Approach is also sometimes called the Broad Front approach (don't storm the barricades or put all your eggs in one basket). In other methods such as Participative Design Workshops, to effect organizational democratization, this is essential if you are to avoid making one group stand out in the crowd as guinea pigs or worse. Because the participants at a Search Conference are drawn from all the areas that share the problem or future, this is largely covered. But as the Search develops, others may need to be drawn into it also and at no stage should the long term process be allowed to turn into an insiders or club event. Desirably, the event and subsequent process of development and implementation will involve wider and wider nets as meeting the purpose demands resources and active support. This is 'community development' at its best, regardless of whether the presenting symptom was a community based one or not.

If there is time, it is also useful to discuss the relationship between the Search Conference and the Participative Design Workshop mentioned above as there are many overlapping assumptions, processes and goals.

At the End

Participants will always have left over questions and these are often of the most practical nature. Reference should have been made at some point to the importance of Zeigarnik effects for the timing of the phases of the process, the nature of venues, reporting and a host of other logistical matters. The quick and easy answer to these is that you aim for the best but make the best of what you can get. All these

matters are, however, fully discussed in Searching (Emery M, 1982) along with more background material and detail of the conceptual framework as above.

Reference

Emery M 1982, Searching, Centre for Continuing Education,
Australian National University, Canberra.

MULTISEARCHES

Notes from National Physical Activity and Lifestyle Conference

Merrelyn Emery, November 1988

The first ever multiple or parallel search conference was the memorable Future Directions Search in Melbourne (Henry and Thompson, 1980; Emery M, 1982). Memorable because it encompassed the best and the worst of everything that is to be found in face-to-face human interaction. We had:

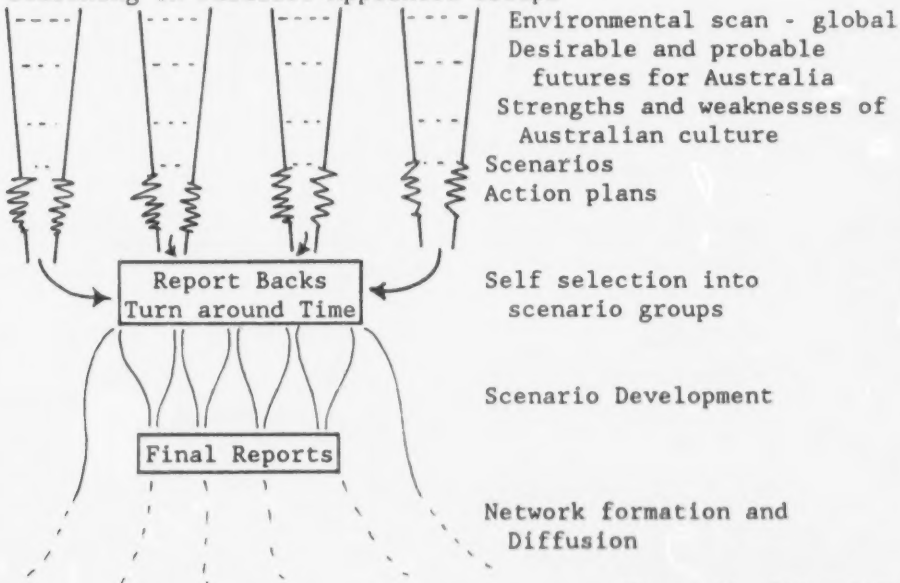
cooperation, competition, anger, fury, individualism, isolation, apathy, business as usual, despair, excitement, joy.

But while these were the various reactions of separate interest groups and individuals within the conference to the others, every group did creative work and the overall mood which won out was excitement and joy. The importance of this for learning and diffusion has been documented (Emery M, 1982, 1986).

The external design for that conference is schematically documented in Figure 1.

Figure 1. The Future Directions Model

Searching in Parallel-Appointed Groups



(Emery M, 1982, p.317)

What is left out of this diagram is the fact that the individual Search streams were interrupted at intervals by the need to attend 'ginger' papers by previously arranged 'experts'. It is still not unusual to find that organizers have little faith in people to work towards their own purposes using ideas of their own. These interruptions generated increasing frustration and culminated in an explosive plenary session and a rash of spontaneous meetings such as 'the person's meeting about the status and future of women'. It was the perfect demonstration of the fact that you cannot safely mix the two design principles.

Since that time there has been an increasing need to bring larger groups together in the creative working mode, for economic and other reasons. The result has been a series of multiple or parallel searches with differing results. As the first suffered from inbuilt structural and process faults, so have the follow-ups, with different faults for different reasons and with various levels of success.

But learning has proceeded. This note reports on a near perfect example of a multisearch conference. Participants = 92 and they were organized into three search conference streams determined on the basis of heterogeneity. Each stream had a manager and these three jointly coordinated and controlled the process from the time the conference convened (Wednesday 5.30 pm to Saturday 1.00 pm).

Planning

As soon as the team of managers was determined, extensive time was put into planning. As one manager was in Tasmania, another in Lismore and with myself in Canberra, and there was an airline strike, there was only one opportunity for a major joint planning meeting of the three with the departmental sponsors and organizers before the main framework and features were set in concrete.

Other matters such as production of the statement about the Search process were handled by phone, fax and mail. Both of the out of town managers came in the day before the event for an afternoon and night of last minute checking and finalizing of details.

Management Coordination

This together with design has been the major stumbling block of previous efforts at multiple searches. As the three of us were aware of this, we put special time and effort into ensuring that coordination was as close to perfect as possible.

The three managers consisted of two pairs who had worked together and one which hadn't, although they knew each other and trusted the other's value system. But the only real test, as experienced practitioners know well, is working together when it really matters.

It had become obvious at the first face to face planning meeting that there were differences in the way the three managers conceptualized and practised the Search Conference methodology OR expressed it in words. It was critical, therefore, that the three spent time simply being together, informally discussing their views and approaches and welding themselves into a team.

This was done at every possible opportunity and constantly during the event itself. Managers met during group work, had lunch together apart from the participants, and in general briefed and debriefed continuously. Talking up front was shared around equitably and according to who felt most at home with those parts of the process, the specific form of the task introductions were agreed before hand and there was much running between stream rooms to report on possible timing, level of difficulty of the task, etc. There were often two recorders working simultaneously up front with one hanging up and this was done flexibly, spontaneously and showed the efficiency of cooperation and great team work.

This effort, we believe, paid off. Management was coordinated, timing stayed basically on course, changing personnel up front was handled smoothly as were adjustments to the design and process.

The latter of course is critical. If there is any sign of confusion amongst the management group or any sign that the person up front does not enjoy the full confidence of the others, there will certainly be repercussions within the troops; notably, a slackening of work or commitment and almost inevitably, the emergence of a basic group assumption.

Design

I did the original design which was exhaustively discussed and slightly modified at the first joint planning meeting. This design is included below.

Like most jobs when you are brought late into the planning process rather than at the beginning, some design features, usually constraints on the Search process have already been built in. This was no exception. The top researcher in the field had already been asked to present a keynote paper. Two of the managers thought this was a serious obstacle to a good start, particularly to creating the working mode and preventing dependency. The organizers were reluctant to disinvite him for political reasons. It was agreed, however, that the manager who lived in the same city would meet him, explain the changed circumstances, (ie, that it was to be a highly participative event rather than a traditional top down conference) and feel him out for shortening the presentation and making it less of a diversion. We were lucky in that this Professor was by means an 'ego' - he readily understood and agreed to shorten his time slot.

We did not think the Minister making a short speech over breakfast on the third day would affect the dynamic and as it happened, the Minister's informally delivered words were totally appropriate and a stimulus to the next stage of the process.

The unpredictability of Searches and especially multisearches means that substantial time buffers must be built into the design. As can be seen, our breaks were substantial and they came in handy. Participants also took advantage of the amount of time we had allowed for the task forces and only one task force needed to work after dinner on the Friday night. Because nine of the ten agreed tasks got up in the self selection process, we started at 8.30 rather than 9.00 am and finished half an hour late. It was however, a most comprehensive final session which included the formalization of an 'alliance' to promote, advocate, etc, physical activity and healthy lifestyles.

Another critical dimension is the proportions of time spent in the separate streams and the total conference. Too much time in your own comfortable home stream and an in group/out group dynamic is established, thereby losing allegiance to the whole, its diversity and overall objectives. We designed for the minimum possible time in separate Searches but adjusted this on the run, actually doing more in plenary as the conference came together and established the working mode as a total group.

Just one proviso here. As a group of 30 is not a group of eight, so a group of 100 is neither. It is still basically a mass meeting and must be managed as such, even though it is working cooperatively. While constructive, it can never be cosy or close or immune from the dynamics of mass meetings. It **must**, therefore, be handled appropriately from the front if these undercurrents are not to be exploited by a 'hungry' individual.

Internal Design

This was also hammered out exhaustively until there was total agreement between the managers as to how the process would work in the streams. This was also a necessary part of ensuring coordination, avoiding paranoia in the participants and keeping to time. (If one stream uses a different process from the other two, it may take more or less time.) There was some slight variation in the time the streams took to complete their tasks but none were sufficiently serious to disrupt the overall process.

Design Modification on the run

We deviated from the attached design first on the Thursday afternoon as we had picked up that there was a need for various outstanding ways and means to be briefly presented. At the end of the afternoon session we suggested a speakers corner, a process of handling it and asked for volunteers. It was here that the conference swung into the

self managing mode as there was a move from the floor of the plenary to adjust the suggestions. They then quickly organized themselves for the adjusted process and it went off extremely well with crisp representative presentations from each of the areas they had themselves selected.

It was also a way of establishing the discipline which would be needed in the final reporting back session on the Saturday morning. The timer was set and respected to give everyone a fair go. Unfortunately, there were two groups on Saturday morning which did not respect these rules but in this, they did themselves a disservice.

As we had inserted the speakers corner on Thursday night following the conference dinner, we were a step behind on the Friday but quickly made this up in plenary. The streams did not meet separately until late on Friday morning when their remaining task was to prioritize the top three tasks that self selecting groups should address. The manager and one representative of each stream then met to compile the final list of tasks. The last twenty minutes before lunch were spent with people wandering around choosing the task force they would join and then receiving the final briefing for these task forces.

In our collective introduction to the work of the task forces, we totally forgot the interim reporting session. Because there is some need to ensure that a task force has not gotten itself into trouble, we toured the groups after a decent working interval and asked that one representative from each meet us in the bar at 5.00 pm to report on progress. About half turned up to report. At least one group could have benefited from a brief plenary interim report but nobody's perfect.

Conclusion

There were no massive outbreaks of the group assumptions. The final outcomes were excellent and certainly not handle turning. Nobody left in high dudgeon. The task was completed and probably to an extent which exceeded the expectation of the sponsors and organizers who took a risk in mounting the event in this form. Commitment to the outcomes was expressed and energy for implementation of action plans was obvious.

We may have learnt how to do it!

This is to say no more than that **coordination and control** of the process are the critical elements. This statement has been a truism for many years now. It has been wholeheartedly accepted in the rhetoric and disregarded in the practice. Well, that's life folks!

Translated into detail, these critical elements in this event compared with others are:

- . Design, Phasing and Timing. Must have room to move without hassling people and damaging their expectations.
- . Management Planning and Coordination. There will be signs during collective planning meetings of goodwill to cooperate and work as a team. If this is present, spend extensive time on the fine detail of coordinating the task. Success breeds success and does wonders for the positive affects and, therefore, the coordination and dedication of management and the creativity of participants and their energy to implement.

These notes have assumed that all managers are highly experienced Search Conference managers. An inexperienced manager on their own is a disaster waiting to happen in a coherent single Search. One in a multisearch can have multiplier effects as their stream infects the others.

References

- Emery M 1982, Searching, Centre for Continuing Education, Australian National University, Canberra.
- Emery M 1986, 'Towards an Heuristic Theory of Diffusion, Human Relations, 5 411-432.
- Henry M & P Thompson (Eds) 1980, Future Directions: 1980 Conference Report, Australian Frontier Inc, 422 Brunswick Street, Fitzroy, Victoria.

Design for National Physical Activity and Lifestyle Conference

Wed.16th	Thurs.17th	Frid.18th	Sat.19th
	*9.00 Prof.T Dwyer 10.30 Finish work on probable & desirable futures. Report and synthesize. *12.00 One report from each stream on futures	*8.00 Minister *9.00 Reports from each stream 10.00 What are the Australian characteristics that make these ways easier or more difficult? What are the other constraints? *11.15 Reports *12.00 Self select into task forces to prepare detailed action plans for each priority	*9.00 Final reports *12.30 Close.
BREAK and LUNCH. 12.30 - 2.00pm			
	2.00 What are the strengths and weaknesses of what is being done at the moment in this area? 3.00 Detail and prioritize a picture of Australia in a state of well being *4.00 Cumulative report of both afternoon sessions.	Task forces are working on plans *4.00 Interim reports from the task forces	
BREAK and DINNER 5.30 - 7.30			
*5.30 Welcome from the Secretary. Briefing. *6.30 Drinks and dinner. 8.00 Changes in the world around us. Desirable and Probable Futures	What ways of moving towards this desirable state have worked? What are most preferred ways? Prioritize.	Task forces working on final plans	
THE BAR OPENS at 9.00 pm			

* means plenary session of the total conference. We will move from this into three streams with sub-groups within those, back again to plenary.

AN ALTERNATIVE GENERAL STUDIES CURRICULUM: A DESCRIPTION, RESULTS AND EVALUATION

Alan Davies

Extracted from the original in ACT Papers on Education 1977-78, (Ed) Mulford W, P Hughes & C Burkhardt, School of Teacher Education, Canberra College of Advanced Education.

Background

Early in 1977, I formed part of a panel that had been invited by the Assistant Principal Curriculum to talk with some of the staff of a Canberra Secondary College about ways in which a General Studies program could be provided to:

Educate the total person for survival in an unpredictable, turbulent future; that facts, concepts, theories, intellectual skills, and well developed cognitive maps are not enough; that attitudes and values must be explored, group morale maintenance must be developed.

The discussion led me to conclude that the sorts of objectives under discussion could not be met within the existing school structure and instructional modes. The high value placed by school on the choice of subject created an inflexible timetable and lack of possible overlap between the timetables of students. The instructional modes were such that the students were never in a time-flexible-setting long enough with the same group of students to attain the sorts of objectives alluded to above.

We all know how easy it is to be critical of the existing system and how much more difficult to actually do something constructive about it. Aware of this, I offered to conduct a pilot course with a view to structuring in such a way that it would meet the above objectives. The starting conditions were that: the students who participated would be volunteers; they would be prepared to work outside the college timetable; they were prepared to work off the school premises; and, students who wished to participate in the planning and management of the course.

This course was then offered at an Assembly. The course met with twenty-five students and five adults for the first time on Thursday, 25 May 1977. Two teachers who coordinated the course covered the ACT Schools Authority requirement that a registered teacher be associated with all formal courses. Two of my colleagues from the Australian

National University attended most of the sessions, initially as observers and subsequently as my reference and support group.

Description and results

Five sessions were held over the second term. A description of these sessions and their outcomes follows.

First Session

The purpose of this first session was to clarify the expectations and purposes that I had for the course as well as the expectations of the students and their reasons for choosing the course. The objective was that at the end of this session we would be in a position to make a contract to proceed or not to proceed thus opting out if they so desired. The reason for conducting such a session was to diminish the possibility of misunderstandings developing later on in the course from the pursuit of different objectives. It has been my experience that if this was not done student expectations would intrude into or cut across the conduct of this course leading to frustration and producing a reduced chance of meeting the course objectives.

The first ten minutes were spent outlining the course background and my expectations and objectives for the course (see Appendix 1), after which the students broke up into four groups and spent twenty minutes on the following tasks:

- . Introducing one another to the rest of the people associated with the course;
- . Spelling out their expectations and why they chose the course;
- . Any other details they wished to contribute.

They were asked to record the information on butchers paper to facilitate presentation to the full group and so that a record of the session could be easily kept.

During the report back there was a general discussion and clarification of expectations and objectives and it was agreed that those who still wished to stay with the course would meet for a four hour planning session on the following Monday at the College from 4.00-8.00 pm. Name tags were used.

In the negotiation over the next meeting time, some of the participants tried to avoid the responsibility for the collective decision by trying to negotiate with me for separate individual times or arguing for times within the school timetable when they were free. I pointed out again that one of the agreements that we had come to was to meet as a full course out of school time at a time negotiated by us all and that part

of my requirements of the course that they had agreed to was a four hour planning session in which they planned their own course. In any event it was not possible to miss out the planning session and get my instructions subsequently. This was the first overt expression of dependency.

Second Session

The tasks established for the second session on May 30 were:

- For students to spell out their view of the nature of the future they were moving into;
- To establish the skills, knowledge and experience they would need to adequately equip themselves for *that* future;
- To select the most important in 2 that they were not currently receiving from either school, home, or community activities;
- Form self managing task groups to plan and carry out a program of work that would achieve their objectives.

The procedure was as follows. Students were asked to list on butchers paper those changes they had seen occurring which they considered would be important into the future. They then formed self selected groups on the basis of their optimism or pessimism about the future and asked to spell out the eight points that were most important in determining their optimism or pessimism. They spent forty minutes on the task and reported back (See Appendix 2). They were then set the task of identifying the sorts of things that this implied and that they should be learning about but which were not currently being covered by the college, family or community activities in which they were involved. Eleven options were thrown up. They were then asked to order the activities and to do this each student was given three votes of equal value which they cast against the list of eleven items.

Some selection of this nature was necessary as one of my requirements was that no student could pursue an individual project - they must pursue a group project - this was essential if the objective 'of learning how to cooperate with others' was to be achieved.

Of the eleven items, four received no votes. I then proceeded up from the item with the least votes until I arrived at one which was in fact the first choice of one of those who had voted for it. It was pointed out that they may wish to pursue more than one of the items during the course and a chance to evaluate progress and change of direction would occur at least twice throughout the course and more if we all decided it was warranted. The remaining five items were listed on separate sheets of butchers paper and posted around the room. The students were then asked to make their choice and form a group around the item of their choice. At this stage we also broke for a cup

of coffee so that the selection manoeuvring and negotiating could proceed informally.

After the break I asked them to form around the item of their choice. Three groups formed and were roughly of equal size; viz, **Communication, Survival Skills and Helping Others**. Each of these groups then met to further define their task and after half an hour reported back. This was followed by a brief input session by myself on group self management and the need for coordination, planning and control.

We listed the constraints operating on the course, for example resources, money, time, transport, self management, time tabling, effort required, working in groups, reflecting on learning and management, etc. Also, we discussed the concept of goal setting and feed back as being essential parts of learning and hence the necessity of coming back in a months time to check our direction and whether we had achieved our goals or were on course, or whether we wished to change course as a result of our findings and experiences within the first month. A role call was taken at this stage to see who had contracted into the course.

Third Session

The purpose of the third session on June 27 was to: check on progress; establish whether new directions had to be taken; see if any of the groups had completed its task; and, establish the basis for evaluation - both of the course and the students.

Firstly, each group reported on the progress to date (See Appendix 3).

A thing of particular interest to me, outside of the content of the reports, was the extent to which the groups had become cohesive in themselves, displaying concern with their own task and thus little concern with the task of the other groups. The most open group at this stage was the **Communication group** and the overtly cohesive, 'groupish' and self interested group was the **Helping Others group**. The least 'groupish' was the **Survival Skills group**.

Secondly, each group discussed the difficulty they felt in explaining to others that they had learnt something in the process of setting up and exploring their tasks, for example, the Communications group which had found themselves some structured exercises to explore the dimensions of verbal, non verbal interpersonal communication, considered that it had been a most valuable activity; however, even though they had learnt a lot about communication they felt they could not convey it adequately to others. They felt unable to convince outsiders that they had not just been sitting around talking. Learning was traditionally associated with books and the objective not the self,

subjective and experiential. Learning was usually thought of as being individually based, not group based. Contributions had to be separate so that we could order and attribute individual contribution.

The Helping Others group were despondent about the nineteen knock-backs they had received from twenty helping agencies they had approached. They considered the time they had spent in making phone calls and other means of contacting organizations as wasted. Learning had to be positive and successful. The implication was that learning could not come from negative events. In fact, my guess is that they learnt more about the nature of organizations, their control over their boundaries, the nature of industrial relations problems, the capacity for organizations to deflect unorthodox and unsettling initiatives from outside, and the extent to which they stay with their founding brief rather than accept that their reason for existence might be a changing thing. They also learnt that organizations become more concerned with their own internal organization than their purpose and how to make phone contacts with strange organizations, to explain a case and a situation to the outside world. In other words, they were learning valuable skills.

They had difficulty in the third session in accepting that the time spent in the above ways was learning time and could be and should be counted towards the forty eight hours of the project. There was a certain amount of cross questioning at this stage about what they were really getting out of their projects, and there was a certain amount of group defensiveness. They had been surprised about the extent to which they had started to hang around together at the College.

They then started to talk about the various sorts of evaluation: of the full course; of individuals; of groups; by self; by home groups; by other groups; and, by the outside resource people. They then spent half an hour in groups coming up with their preferred form of assessment. They also saw the difference between assessment based on judgments, written and verbal reports, and the nature of the activity they were undertaking.

At the end of that session I gave a too brief and unsatisfactory input about the measurement of learning satisfaction and self management. I handed out a sheet setting out criteria of measurement (Appendix 4) and asked them to assess their own group functioning before the next session. In addition, I also asked them to individually take another group of six students from one of the other classes they were taking and repeat the exercise. Firstly, I asked them to check to see if their teacher was happy with this procedure.

We then made a time for the next meeting in another month, a meeting which was to be of four hours' duration in which they would report

back, redirect and focus on an understanding of groups, group behaviour and the management of organizations.

Fourth Session

Groups reported back on July 4 on their progress to date and their plans for future activities. All groups decided to stay intact and they were well on the way to chalking up their required number of hours (all groups had chalked up twenty to thirty five hours by this stage). There were various levels of satisfaction with their product to date.

They had also filled out job satisfaction charts but found some of the criteria difficult to interpret (most likely because of my poor explanation at the previous meeting). They had not been confident enough to try out the criteria on a group of students in relation to another of their courses, and so at that stage we lacked a comparative basis with other teaching/learning modes.

The results of their own surveys were used as an introduction to the section on studying group and organizational behaviour. I spelt out the purpose of this section which was to reflect on their learning to date, particularly as it related to the way they had organized themselves and the way they had operated as a group. I was determined that the total group become a self managing learning group around this task in the same way as the small groups had obviously become self managing learning groups around their chosen tasks.

They had taken responsibility for their own direction, control, planning and coordination. There was uncertainty at the role that I took. I wanted them to start by examining learning satisfaction. Long periods of silence indicated that they lacked direction. When I clarified the task on one occasion I then asked one of the students to repeat the task; the reply was stated in very different terms, and more akin to the different objectives they had. Only the staff and a couple of the students heard what I had said as I had meant it to be heard. The statement seemed to be fairly explicit when we analyzed it. The group was reluctant to become self managing and vacillated between dependency, flight and on occasions pairing (the basic dynamics of immature or insecure groups). I interpreted the group behaviour to the students at the end of the session as I had seen it and the session ended on an ambiguous note. We agreed that the next time we met it would be to make and evaluate the final reports and the course. It was suggested that the session be conducted after the end of term because of the difficulties in getting projects in by the end of term. They also agreed that they would like to meet off campus as they had found some of the other meetings off campus productive, constructive and enjoyable, given this mode of learning. So they decided to meet at the Centre for Continuing Education at the Australian National University for two hours on a date seven weeks hence.

I was somewhat dissatisfied with the session and analyzed it with my two colleagues for two hours after the completion of the session. We came to the conclusion that the major reason that the students would not take responsibility for the conduct of the session was that the task was an imposed one (and as a result not entirely understood). It was my task, therefore, it did not relate to their needs or their expectations or what they saw as the agreements entered into earlier. They were prepared to get stuck into and self manage quite difficult tasks in interpersonal relationships around the tasks which they had identified or participated in the setting. They were looking for leadership where the task was externally set. The leadership had to relate to the ownership of the task and I was the owner of that task and they were unwilling or unable (because of a lack of understanding of it) to take over the ownership. There was not deliberate avoidance, in fact, there was some frustration at not being able to get into the task.

Fifth Session

I was somewhat apprehensive about the likely response to the final session on August 23 and so was quite relieved when all three groups turned up ten minutes before the appointed time on the appointed day. The purpose of this last meeting was to test their performance and evaluate the course.

I started by spelling out my expectations of the day. The group was pretty apprehensive, but there seemed to be general agreement that the task could be broken conveniently into four parts:

- . For the groups to assess their own performance;
- . Reporting back on what they had achieved and done (to be done in plenary);
- . For them to assess the value of the course and attempt comparisons with main stream approaches to learning used at the College;
- . To evaluate as a total group the value of the course.

The students went into their groups for half an hour to assess their own performance. In fact most groups in that half hour worked out what and how they were going to report and took the opportunity to get down on butchers paper their findings about the course, what they did, what they had learnt and what they had got out of it.

When they returned each reported in turn. Once the reporting had started, I was out of the role of leader of the course as it became a work group and was away and running. Towards the end of the session I had to cut in to make sure that we were going to get through all the work in the agreed time. The session went thirty minutes overtime. During the reporting back, there was an all round interest between the groups and an active, intelligent and interested

questioning, group to group, and active and intense involvement in the whole session. An extremely good rapport developed within the whole group. Again, I believe this situation related back to the fact that the task was agreed, negotiated and understood, and owned by all of us.

There was little reporting back on their own evaluations of their work except for general statements that they and I were all very satisfied with their performance. They again expressed the view that apart from the content learning, the support groups that developed were probably the most positive and valuable outcome. They also valued the amount of mutual support and respect that they were able to achieve that the other structures within the College were unable to provide. This was not because of a lack of a will to do it but because the high value placed on choice and diversity (which dictates the structuring of time) meant that people could not get close enough to associate at the personal and supportive level.

The groups then reformed to evaluate their learning satisfaction and the results were recorded. They evaluated this activity against English, another subject they all do, the aim not being to evaluate the teacher but the teaching format and approach to learning. They all came from different classes and so, in a sense, there was an averaging out of teacher influence. Our activity was, in another sense, also teacher independent in that I had fourteen contact hours of the fifty three to fifty eight or more that the students spent on the activity.

Evaluation Results and Conclusions

The significant outcomes of the evaluation at the fifth session were as follows:

That the 'elbow room' was too great in our course and too little in the 'normal' classroom situation. In discussion it became apparent that the group in which the elbow room was insufficient differentiated between the limitations arising from course structure and that arising from the outside organizations they were relating to. They were the Helping Others group that attempted to help other helping organizations and found all but one knocked them back. This group found that elbow room from the course was too great and were in agreement with the other groups in their evaluation of its extent.

It was suggested that the next time round a tighter framework could apply without loss of the self managing character of the course and the desirable outcomes that flowed from that. This would probably mean more clearly defined and shared objectives as they relate to the learning about groups and

organizations and clarifying expectations early on in relation to what is an acceptable product and what is not.

It is my guess that elbow room would need to be positive. People need freedom to learn, they need elbow room and this implies some ambiguity and uncertainty. This might be one of the important aspects of learning - to self manage, take responsibility, and hence, the sorts of learning that is being looked for in the General Studies program.

My guess is that because we are using an approach of which the students lack experience, uncertainty is built in. All the explanations in the world would not allow an accurate understanding of this unfamiliar approach. The problem cannot be solved, in a sense, until it is translated into a different framework and that requires having the previous frameworks challenged. This, in turn, creates ambiguity to the learner.

On the dimension of variety the course fared better than 'English'. I see the difference arising from the approach not the subject. I believe it reflects the fact that the groups did genuinely self manage, and so were able to choose their own level of variety. The only exception is the Helping Others group which was externally limited in this respect. Again, they specifically referred to that in the evaluation session.

In fact, this group went out and created its own helping organization in the form of the 'Belconnen Disco' which is an ongoing activity. They created some of their own variety.

The most significant factor and the one which demonstrates that the course did achieve its major objective is the criteria of mutual support and respect. It scored across the board higher than the conventional class-room approach and on average by an order of magnitude.

To develop a situation where mutual support and respect starts to operate effectively, one needs to be able to associate together for periods of time about an agreed task with the same group of people.

The other factors in the evaluation show few consistent trends varying from group to group and individual to individual. In terms of a different mode of learning and content, the communication group probably show the most interesting difference in that they point more to their experiential learning where the others point more to content learning. It is interesting to note that four of the nine students dropped out of the Survival Skills group before its completion whereas

none of a group of seven dropped out of Helping Others, and one of a group of six dropped out of Communications.

It is important to note with respect to the mode of learning that the number of hours spent in teacher contact was fourteen out of the forty eight formal and fifty three to probably seventy or more that was actually spent by some students. This alternative certainly has deep implications for the role of the teacher.

My general observation was that the students learnt to deal very adequately with interpersonal conflict and with all sorts of concerns and support outside the course itself. This was because the groups had a life beyond, and provided support to, the immediate task of General Studies.

It might well be that the implications of this alternative Curriculum option exercise for school organizations is that it would be desirable for each of the pupils in the school to be associated with one such group and/or the approach to be used in other subjects. It is my guess that the need for school counselling would fall away if this was taken up as it would create a much more healthy school community, where problems would be dealt with within the fabric of the school population. However, the students thought that a more broad application would mainly be limited by the fear of freedom from the school staff - their non-acceptance of students' self management and the feeling that the students were not responsible and therefore they would not be prepared to give them the elbow room to be responsible. This fear might also mean that some students would not wish to participate and thus the approach used may only apply to self selected students and self selected staff.

On the other hand, the most significant finding from the exercise was the unequivocal evidence that students of this age are very capable of managing their own learning. I and the other people from the Australian National University were greatly impressed by the responsibility, capacity, creativity and initiative of the students and I certainly believe that they learnt more conducting their own course than if it had been managed and conducted by any of us or any of the school staff.

Reference

1. Quote from a letter from the Assistant Principal (Curriculum) at the College in question.

APPENDIX 1 - Course Coordinator's Expectations

1 semester - 12 weeks - 48 hour course.

Some record of having spent 48 hours required and some assessment of student achievement required. How this was done was for the total group to decide.

The next session would be devoted to planning and would take about four hours. This meant we either met after College, at night or during the weekend.

They would plan and manage their own program. I would only provide the framework within which they worked.

We would devote two to four hours to conceptualize about organizations and their management arising from their experience of conducting this course.

I would provide only one input session - about group self management.

No student could work individually on a project.

APPENDIX 2 - Second Session: Points Most Important in Determining Student Optimism or Pessimism about the Future

OPTIMISTS

Potential to manipulate future.

Man's natural instinct to survive!

Future seemingly more of a challenge rather than a threat.

Man's striving to better himself.

Greater awareness of self and world ----> others.

Greater tolerance of diversities.

PESSIMISTS

In moral standards (eg, crime, drugs).

In pollution through industrialization and consumption.

In probability of nuclear war through the number of countries with nuclear capabilities.

In social instability; eg, strikes, drugs, dropouts.

In natural resources through abuse.

In influence of the media.

. In materialism and leisure time and the consequences of a materialistic society; eg, unemployment - dropouts.
. Increase in population, urban sprawl.

ON THE FENCE

. Media.
. Living standards.
. Materialism.
. War (in general).
. Breakdown of family unit.
. Self awareness (awareness of others).
. Sexual equality.
. Unemployment.

APPENDIX 3 - Third Session: Progress of the Three Groups

HELPING OTHERS

had done

. Contacted 20 helping organizations by phone or direct contact. All bar one had knocked them back.
. Marymead had welcomed them and they had spent a day relieving staff and working with the children.

planned to do

. Follow up a couple of the other contacts.
. Take Marymead kids to 2CC.
. Investigate possibility of a Disco-dance for 15-17 year olds in Belconnen.

concerns

. Difficult to arrange meetings.
. The knock-backs were demoralizing.
. Found a deal of conflict within the group.

SURVIVAL SKILLS

had done

. Spent a day in the bush.

planned to do

. Look after a household for a day.
. Do first aid course.
. Have lectures on how to fill out financial documents, income tax, Medibank, unemployment.

COMMUNICATIONS

had done

- . Spent a session in which they explored interpersonal communication.
- . Had contacted artists and poets to discuss the meaning of communication with them.

planned to do

- . Meet with various artists, etc.
- . Develop a theory of Communication.

APPENDIX 4 - Criteria of Learning Satisfaction

adapted from Emery and Emery - 'Participative Design'
Occasional Paper No.4, Centre for Continuing Education, Australian
National University (See Part II of this Volume)

PARTICIPATION AND SELF MANAGEMENT IN COURSE, WORKSHOP AND CONFERENCE DESIGN - PRINCIPLES AND METHODS

Alan Davies, 1989

This chapter originally appeared as **Participation and Self Management in Course and Conference Design** published by the Centre for Continuing Education, Australian National University in 1979.

At that time little distinction was made between courses and workshops on the one hand and conferences on the other. While some of the principles and methods are common to courses and conferences, more recent experience has led to a differentiation of the two based on purpose, timing and numbers. In addition I have expanded the section 'underlying assumptions' and added a section on concepts. These additions reflect the need to give some justification to participants for the use of participative methods on the one hand and some conceptual coat hangers on which to hang the participative experiences and processes.

In the conduct of noncredit courses, conferences and workshops for adults we commonly meet a great diversity of expectations, needs and relevant experience amongst those attending. Most of those responsible for managing the learning would regard it as part of their responsibility to take such variety into account and to try and use it to advantage. This chapter is intended to provide the reader with information on a systematic and well tested set of principles and methods where the benefits of recognizing and using people's experience outweighs any costs. The methods can be used by course managers in jointly planning, managing and conducting courses with participants and other resource people. They are aimed at maximizing the learning and the commitment of participants to mutually agreed course objectives.

I highlight the point that in this chapter I am specifically talking about **noncredit** or '**certificate-of-attendance**' activities. It is my experience that participative methods cannot be as readily applied to credit work where students and subjects are in competition nor where the body of knowledge is tightly specified. More of the participatory approach can be applied to credit work where learning contracts and competency based assessment apply.

The chapter concentrates on that planning and self management which takes place once the course has started, although there is some reference to the planning process as a whole and precourse planning. Problems can and do arise where the learning needs of participants

have been externally and inaccurately assessed. This particularly applies to those sent by employers to training courses because of some perceived lack of skill or knowledge or because of inappropriate attitudes. Problems in organizations can have at their root, inappropriate structure, poor management or lack of the requisite skill or knowledge on the part of employees. If structure and management are the problem, the training of employees is not the solution. Participative processes will however bring participants to better see the nature of the such problems, which can in fact exacerbate the problem unless management is prepared to act on itself and the structures.

The approach describes a planning module for courses of two to twelve hours' duration which is placed at the start of a program and a course framework which allows for incourse evaluation, adjustment and self management. The planning process for courses and workshops is set out descriptively and diagrammatically to illustrate the logic and the relationship between the various elements.

This chapter is based on a view that adults can take responsibility for their own learning if the necessary time and resources are available to them. These and other assumptions of the author about the way adults learn are made explicit in Section 1. The organizational concepts inherent to the approach are elaborated in Section 4.

Both the objectives, methodologies and educational design features of each element of planning, design and management are discussed, including data collection, programming and evaluation. The range of situations to which the approach has been applied is also discussed. Courses range from four hours to three months in duration, in residential and non residential settings: in single blocks of time or in modules spread over a period as long as six months; in mono and multicultural groups; using multiple languages and in eight different countries. Some of the pitfalls to watch for when applying this methodology are then outlined.

There are basic differences between courses and conferences and Section 3 spells out the design features for conferences in general and participative conferences in particular, describing some of the tools that have been developed to administer complex conferences. A range of situations is again outlined to give the reader a better appreciation of possible scope and flexibility and again some of the pitfalls are mentioned, particularly those relating to design. The selection of appropriate teaching and/or learning methods is of course, critical to success.

The chapter concludes with some of the handouts and instruments which the author has found of value in the management of self planned events.

I would like to acknowledge the assistance of the Trade Union Training Authority, Hawker College (ACT), the Australian Department of Education, the Australian Association of Adult Education, the Tasmanian Education Department, the Asian-Pacific Bureau of Broadcasting Development, the Asian-South Pacific Bureau of Adult Education, the NSW Office of Aged Services, the Oslo Work Research Institute and the Centre for Continuing Education for providing opportunities to test and develop this approach. In particular, I would like to single out the Trade Union Training Authority where most of the thinking and development about courses took place and Des Hanlon with whom it took place.

Section 1. Underlying Assumptions.

In this section I have set down my usage of some terms and concepts.

The Place of Learning in Organizational and Social Change.

Our tacit knowledge is highlighted when we see or hear stated simply and clearly what we have known, or perhaps, half known, yet never stated. Eric Trist recently articulated some assumptions that have long motivated me in my work on participation but for which I could not find the words.

To bring into being such (social) changes raises the question of transformation being personal as well as organizational. No one can force change on anyone else. One has to experience its presence oneself. Unless we can invent ways which allow a paradigm shift to occur in very large numbers of people, our hopes for substantial change will remain a myth.

What stands most in our way is the destructive side of the human condition, which is present in all of us. We tend to split off our good side from our bad side. We deny the bad in ourselves and project it on to others. Our institutions, however imperfect, maintain our cherished defences. These represent a large part of our identities. This makes change difficult, at a level below the reasons usually given. These are real enough - holding onto power and status (among the 'haves'); clinging to dependency and security (among the 'have-nots'). Whatever our position, we are all, to some extent, against change.

(Address to Einar Thorsrud Memorial
Symposium, Oslo, 1987)

My interest in participative processes derives from a drive to make a 'better society'.

At first I thought this could be achieved through the political process and in small part it can, perhaps more in socialist countries than those under liberal democracies where the individual has more rights than the collective. Subsequently I was persuaded by Fred Emery to the view that the main villain in the piece was the organization and in particular the dominant 'taylorized' work organization. Again this is a part of the truth. Increasingly however, as does Trist, I see the problem as one at the level of the individual, nested within the organizational and the political.

At the individual level, learning and indoctrination have long been recognized as the answers and so we have seen massive investment in formal education. While this massive investment has produced major results of a kind, it again is only part of the story, at least of today's story. The sort of learning that Trist alludes to is not learnt in the formal system and most of it does not lend itself to the teacher/student relationship, except perhaps in preschool and early primary school and some aspects of the master/apprenticeship relationship. One needs to develop particular attitudes and values, confidence, courage, a level of self awareness, self criticism and self management, the capacity to manage ones own learning and to understand organizational, social and political processes.

I believe that one learns these attitudes, values, and skills by participating in the planning, control, management and conduct of the events that affect us. We gain a knowledge of them by reflecting on the processes through which we participate. This knowledge is largely in the form of commonsense concepts about learning, groups and organizations that help people make sense of their experience and act more purposefully in the future.

One of the beauties about this form of learning is that it largely occurs while one is doing other things. The 'cost' is the 10-20 per cent of the time that is needed for reflection and concept development. Our need for this sort of learning is so great that in my view we should take every opportunity to build it into our normal endeavours whether they be planning, working, managing, recreating or educating.

Action researchers have long understood that:

'one of the products of work (or any human endeavour - author's addition) is people.'

This captures the fact that 'taylorized' work organizations leave people diminished in their humanity whereas participative organizations develop their humanity. I believe that the same argument applies to course and conference organization. The use of participative processes can leave participants better able to manage their own learning in any setting in which they find themselves.

Systems and Futures Concepts

Much of the underpinning philosophy of participation is premised on an 'open systems' approach to organizations and to the planning process. I have found it helps people to better understand why the participative approach is being used if they are introduced to 'open systems thinking'.

The basic construct is a system in a broader environment with which it is interdependent. The system itself has an integrity and independent identity given by the system's organizing principle. You cannot change one aspect of a system without there being some effect on the other parts of the system. The individual human being, the family, an organization are all examples of systems. Thus anything that happens to one member of the family impacts on the others. Family therapy is based on this approach. On the other hand, shoppers in a supermarket are an aggregation rather than a system because they are not closely interdependent.

The open systems approach suggests that one must always look at a system in the context of its environment, particularly when planning which necessarily involves the anticipation of future change.

In a course or workshop one may only have a temporary system, a temporary organization and a long term aggregation. However, the ongoing systems of which we are a part all lie in and are critically dependent on the same social environment.

Futures Scan

All planning and education are carried out against assumptions about the future. If a group of people are planning collectively it aids communication if they are aware of each other's assumptions and the extent to which they are common or after consideration become common. While in most educational activities people are not directly concerned with a common future, they are part of a temporary community for the duration of the course. They are involved in mutual learning and accurate communication is an aid to learning. Having a view of 'where others are coming from' greatly assists that communication.

We all carry around a view of the future against which we make decisions and act. Whatever it is, it is a view against which our actions need to be seen if they are to be understood. While there are other assumptions that also influence the way that people think (assumptions about people for instance) a joint look at the future is a safe, fast, comprehensive and yet incisive way of making attitudes and values explicit as well as providing a common context from which to work.

An open systems approach to the future not only gives recognition to the view of all participants, it allows them to be shared and reassessed.

The Shift from Teaching to the Management of Learning

As we increasingly come to recognize that people bring knowledge, experience, wisdom and purposefulness to any educational event then ways must be found to bring the new and the old into a new integration. A shift from teaching to teaching/learning has taken us in the right direction but still leaves the learner in an inferior position. The concept of managing learning gives scope to a redefinition of the role and relative value of the experience, knowledge and skills of all involved in the educational situation.

Managing learning is the process of managing an event or situation to maximize the amount of learning that can occur consistent with central purpose of the event. It is consistent with the broader concept of ecological learning which assumes that much of the learning we do is taken directly from the environment without the mediation of a teacher. The role of the manager is to ensure that the environment is learningful and that it affords the learning that is being sought. That role is known as **The Manager of the Learning Environment**.

Educational Assumptions.

Most of our learning has to be directly tied to broader social and environmental purposes if it is to have meaning, relevance and provide a basis from which to act. Alternatively we can say that there is little practical learning that can be totally abstracted from the context to which it is to be applied. By practical learning I mean that which informs our decisions and practice.

Participation and learning are tied to emotions and power relations. People learn by their mistakes and grope toward new and hopefully more utilitarian and socially responsible attitudes and values. By severely punishing people for their mistakes we reduce their capacity to learn.

Many educators believe that education is a genteel endeavour and wish it to remain so. They have often slipped into positions of status, power and influence through chance or a successful involvement in education and have no wish to change this situation.

Groups are able to manage their own affairs so long as the following conditions apply:

- . The task is understood and agreed by the group;
- . They have the necessary resources, information, skills, knowledge and time to carry out the task. Further, that if somebody imposes management from without, by appointing a

chair and rapporteur, the group remains dependent and looks to the chair to articulate the purposes.

Learning involves behavioural as well as cognitive change and the two need to be directly geared. To open oneself to learning often also means exposing vulnerabilities and there is a perceived loss of control as one makes mistakes or exposes one's ignorance, particularly to organizational inferiors. It is, therefore, important to be able to create a safe climate for all involved. Here the stance and values of the educator or manager are critical.

More learning occurs if people participate in and are responsible for the planning, control and management of the events of which they are a part. It is easier to contribute if one is talking about one's own experience, beliefs and values on one's own ground.

We all operate out of a view of the future that is our own, and not necessarily known by others. We only take account of other data if it makes sense to us in terms of our world view. In the early stages of courses and conferences, it is important to learn of others' world views so that the learning community as a whole can develop shared and collective purposes. Once there is a sharing of world views, people can better understand what others are saying. They have a context to work from.

Every person's actions and contributions are logical when seen in the context of their world view. Much of the learning we need to do requires us to re-examine those world views, not just to selectively add information that reinforces an unquestioned existing world view.

All individuals generally have something they believe they can contribute to a course. This could be in the form of information, skills or experience and may be relevant or irrelevant to the task at hand. However, unless the individual has a chance to table that contribution they will intrude it at inappropriate times which will retard the constructive and connected work of the group. Generally an individual will accept the group's judgment as to whether and when their contribution is relevant to its purposes. Thus an issue is either amplified or attenuated by the group. It is important to identify and use as much as possible of the relevant skills, knowledge and experience that reside in the group. People can become enabled through contributing.

To avoid dependency there is a need to take course coordinators out of the content-expert role. Every person working in an organization is a potential educator.

Some things are better learnt by doing rather than by being taught. Others require articulation. There is often, however, an unwitting

oppression by the verbally articulate and educationally qualified of those who are not.

It is impossible to predict all the needs, expectations and capacities of participants in advance of a course or conference. People learn in different ways. People can, and often do, self direct their learning.

Nobody has the right to an audience. In conferences in particular, I have found organizers give a grossly disproportionate weighting to the feelings or ego of the contributor over the interests of the participants. In turbulent times we all need to be actively adaptive which in turn requires a knowledge of our own learning and adaption as well as that of organizations and the society as a whole.

Given the above assumptions I sometimes find that I am espousing a view or ideology of participation which is not shared by sponsors or participants. However, sponsors and participants will usually run with the approach to the extent that it contributes to the realization of their objectives. But there is almost inevitably a tension during the course whereby the social, organizational and individual objectives are potentially in conflict. When there are situations where the tensions are irreconcilable and there cannot be a constructive outcome, it is best not to proceed. In most cases, however, the tension can be managed in a productive way for most of those involved.

The best safeguard is to be clear about the different objectives at each of the planning and negotiating phases.

Section 2. Courses and Workshops

I find it useful to distinguish between the **planning, management and control** of a course or workshop.

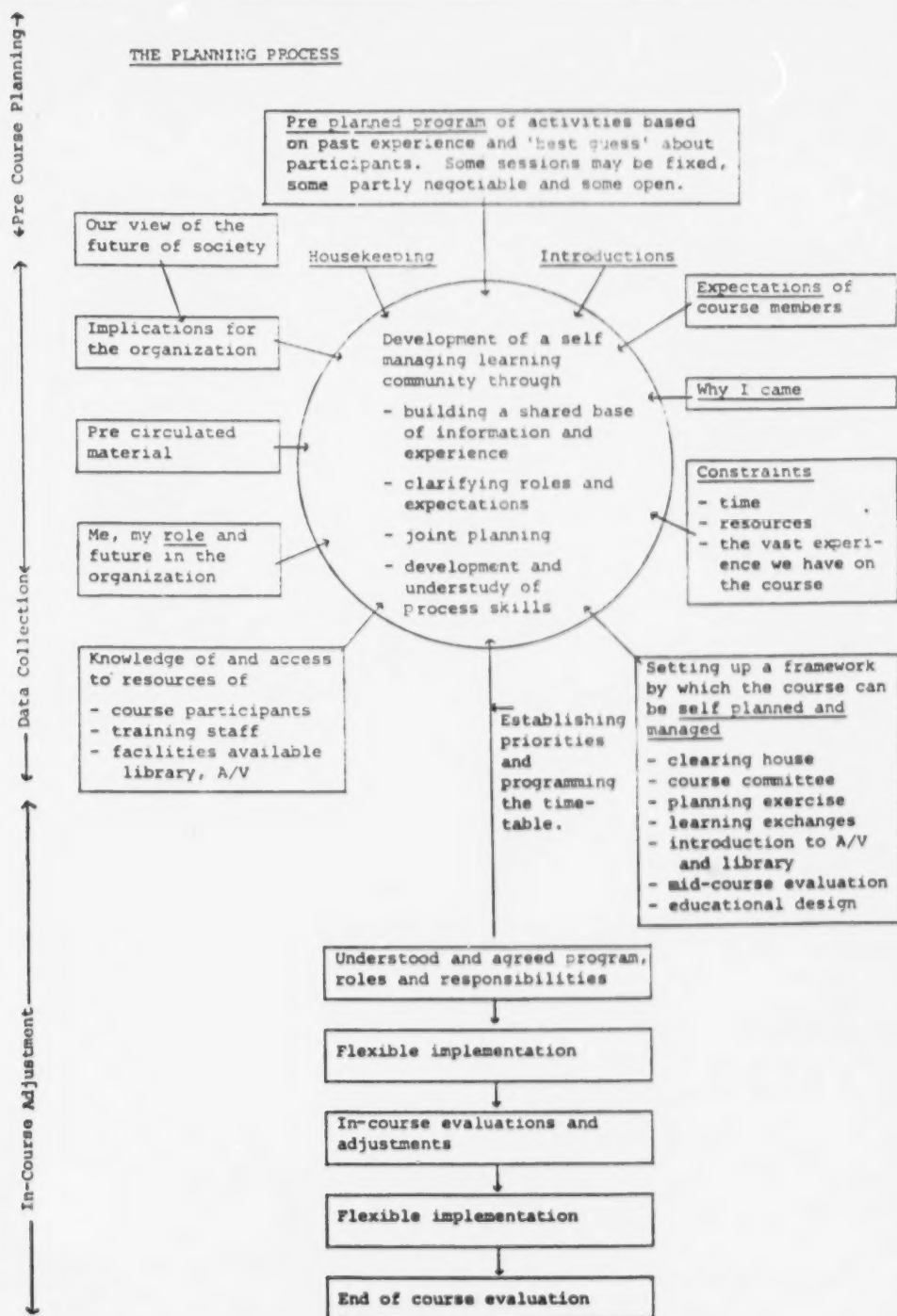
The Planning Process

Overall Objectives of the Planning Process: to

- . optimize the cognitive and effective learning and attitudinal change of those participating in the course and to enable them to apply that learning where they judge it to be appropriate;
- . leave people better able to manage their own learning, participate with others to enhance their learning environment, and to jointly manage their collective affairs.

This to be achieved by:

- . the development of a selfmanaging learning community which in turn requires:



- . building a shared base of information and experience;
- . clarification of roles and expectations;
- . joint planning;
- . establishing procedures for the ongoing evaluation, adjustment and management of the program;
- . the identification of needs, relevant and available resources;
- . the placement of the course in a broader organizational and societal context;
- . arrival at an agreed program.

The diagram on the previous page suggests a four stage logic for the conduct of the planning process.

First the precourse planning by the course organizers based on course objectives, educational design principles, past experience, the resources and time available and if possible, input from the participants.

Second the gathering and sharing of the information, concepts and experience necessary to participatively plan, control and manage the course.

Third giving priority to the information that has been generated in phase 2 and integrating it into the program devised in the precourse planning.

Finally, establishing procedures for the ongoing evaluation, adjustment, control and management of the course.

Let us look at the first two stages in more detail. The third and fourth are covered under "Methodology".

Precourse Planning

It is perhaps self evident, but still necessary to say, that the sponsors and organizers of a course take upon themselves the responsibility for convening a course and in so doing determine, as a minimum, the explicit course objectives, and in broad terms, those who participate.

Prospective participants can be involved in defining or redefining objectives and in the detailed precourse planning. The desirability, practicability, methodology and efficacy of precourse participation will depend on a number of factors of which the following are important:

- . the subject matter;
- . the way and the stage at which the participants are identified;
- . their organizational and geographical locations;
- . the organizer's previous experience of running the course;

cost;
the course objectives.

Let me briefly elaborate on each of these.

If the course is dealing with abstract subject matter such as mathematics or with skill development such as learning a foreign language where the methodologies have been honed over a long period, the scope for precourse participant planning is small. However, questions of motivation, previous experience, conflicting commitments, constraints, preparatory work, aptitude etc need to be taken into account in some way. In matters concerning management, leadership, problem solving, particularly where all the participants are from the one organization, there is great scope for participant involvement in precourse planning. Such involvement may in fact lead to a different understanding of the underlying issues which led to the proposition of the course in the first place, and perhaps to abandoning the course in favour of an alternate course of action to solve the problem.

If participants are identified through a prospectus or an advertisement, come from many locations and for a variety of purposes, there is some, but limited, value in their being involved in precourse planning. The basic assumptions cannot be renegotiated. However, one can start the process of clarifying and negotiating expectations and one can allay apprehensions and, if there is an opportunity for face to face contact, create a climate of confidence, trust and hence risk taking. It also can extend dramatically the timescale over which one can rethink one's position. All learners and particularly adult learners also have a multitude of questions in their minds that can block them from thinking themselves into the course. Many of these questions can be answered prior to the course.

Much more can be achieved if participants can meet face to face. The possibility of this depends on financial and geographical considerations.

Where people are from the one organization there is scope to achieve desirable outcomes beyond the primary purpose of the course. The chance of this is greatly enhanced by involving participants in the precourse planning.

If one has run the course before for a clientele recruited in the same way, then one has some idea of the range of expectations, motivations and experience one will find amongst participants. Thus there is less need to involve the participants from the

point of view of the subject matter, the starting level and the likelihood of any mismatch of expectations. However, there would still be the same advantage in allowing people think their way into the activity over a longer period of time and to reduce any anxiety or defensiveness.

Precourse planning is a costly activity as it takes the time of the organizers and the participants and one has to weigh up the advantage. It is my view that in most cases the benefits outweigh the costs and if necessary, the length of the course can be reduced to make up the financial cost of precourse planning. In the past I have had no difficulty in convincing clients in Melbourne and Sydney that the cost to them of my time and travel to brief their employees about a course they were to come to in Canberra was well spent, and that it is a legitimate charge on the course fee.

If the course objectives include such matters as team building, planning, job design and other organizational matters, then an in situ briefing in advance of the course can multiply its effectiveness. The participants can be doing all sorts of preparation, data collecting and negotiating not only amongst themselves, but with the broader group to which they will be returning. The latter will play a major role in the group's ability to implement any new learning they bring from the course or workshop.

Within the overall objectives, the extent to which participants are involved in precourse planning can vary greatly from 100 per cent to virtually nil.

Incourse Planning

I argue here that at least 20 per cent of the program should always be dedicated to incourse planning and the adjustments and additions to the program that flow from that planning. This view is based on at least five assumptions. First, that in any course we meet a great diversity of expectations, needs and relevant experience among the participants. Second, that by involving participants in the planning, the resources available are maximized and the participants better understand and are more committed to the course objectives. Third, that the majority of courses can be modified with advantage after they are convened. Fourth, that a better knowledge of 'process' is of value to individuals in all the settings in which they find themselves, regardless of the extent of precourse planning. Finally, any mismatch of objectives can be clarified and negotiated.

As most sponsors and organizers are unused to thinking of self management processes it is important to explicitly include them in the timetable from the outset and to bring them to their attention. In this regard I have found a planning template somewhat along the lines of the following to be useful. Once the content of the program has also been entered it is useful to have some form of colour coding or hatching that clearly identifies those times that are set aside for the self management of the course, for conceptual input relating to or reflection on that process.

If a participatory planning approach is to be used, the preplanned framework must specifically allow time for incourse planning, course self management, incourse evaluation and adjustment, and the incorporation of new material arising from the planning process.

Gathering and Sharing Information

The data that needs to be collected and shared will vary according to the objectives of the activity, the time available and the experience and knowledge of participants.

As the diagram suggests the order is not critical. However, experience suggests that a number of the tasks should be grouped together to avoid excessive variety and to allow the groups sufficient time to move through the process of group formation while still having adequate time for the task. A number of combinations have been tried and the most satisfactory found to date are as follows:

Session 1.

In Plenary: The Course Briefing including a run through the program, a rationale for the planning process, ground rules, housekeeping information and constraints.

In small groups: Expectations - 'why I came', consideration of whether the program will meet individual needs and if not, what adjustments are necessary. This is then followed by plenary reporting of the group tasks and a negotiation of any discrepancy in expectations between the participants and the organizers. This can lead to changes in the program or in extreme cases some participants leaving the course or conference, more on this later.

At some stage during or before Session 1 participants should be given a note outlining the planning process.

Session 2.

Plenary brainstorming of data about the changing and unchanging character of society.

- . **Small group** consideration of the implications of this for the organization or human endeavour on which the conference or course is focussing.

- . **Plenary** reporting and collation.

Session 3.

- . **Small Group Discussion** of each person's role and future in the organization and a cataloguing of the skills, experience and knowledge of the participants.

Session 4 (5, 6).

- . Establishment of the in-course planning, control and management structures.

- . Learning where to find, how to access and if necessary, how to use the training facilities including audio-visual, library, and administrative.

Briefing Session

Objectives: to

- . provide a basis for understanding and judging the content and structure of the program as a whole, its control and management;
- . enable participants to become conscious of and knowledgeable about process.

Content

- . Reiteration of the objectives of the workshop and the way in which the course is structured to meet those objectives;
- . A run through the program indicating which parts are fixed and which are negotiable;
- . A spelling out of the process to be used during the workshop, emphasizing that the course itself will be deliberately used to develop and clarify concepts about learning, organization and educational design;
- . Clarification of the roles of participants, administrators, consultants and outside resource people. In particular, emphasise that the organizer's role leading up to the workshop has been to act as convener, determine the overall objectives, select the range of participants, provide the framework of the program, select and program outside resource people where it was considered that their experience, skills, knowledge would complement that found in the workshop. Point out that the manager's role during the workshop is to create and

- co-manage with participants, a climate in which maximum learning can take place in line with agreed overall objectives (facilitators, colearners);
- Give information about the housekeeping and administrative arrangements;
- Briefly mention the organizational and learning concepts that the participants will be using in conjunction with their management and conduct of the course/workshop.

Expectations, Introductions

Objectives: to

- allow the learning needs, as seen by the participants, to be taken account of in the workshop planning;
- get agreement on the collective task (ie, form a community learning contract);
- give some weighting to participants' priorities;
- ensure that participants can see that their concerns will be covered at some stage in the workshop and so allow them to concentrate on the matters at hand and avoid a situation where people raise issues and concerns at inappropriate times;
- dispel and negotiate unrealistic or inappropriate expectations;
- give participants some idea of who else is there and what their interests are.

These ensure that people begin to know the backgrounds and interests of at least three or four others in the course and each has three or four others who are in a position to look after their interests or call on their expertise without the individual having to push their own barrow.

Process

- Use small groups of four to six;
- Ask them to report on butchers paper and to introduce their fellow group members in the process;
- Make sure the task is understood. This is best ensured by writing the questions out and discussing them with participants -
 - "What do you expect to get out of the course?"
 - "What would you like to get out of the course?"
 - "Do you believe the program as outlined will meet these expectations? What would you delete, add or change?"
- Suggest they divide up the time equally;

Indicate that the report should not identify expectations with individuals, otherwise you might receive expectations that the participants believe you want to hear.

Reason for Participating

Objectives: to ensure that

- . people participate out of choice;
- . there are no misplaced expectations about people's motivation or commitment;
- . people don't have to act out a false role;
- . people start with a sheet clean of any myths about commitments to the workshop;
- . there can be negotiation and hence possible accommodation of people's objectives that fall outside the scope of the workshop objectives.

Process

As for 'expectations' with particular emphasis on anonymity. These two tasks are best combined and dealt with by the groups at the one sitting.

Comments

At this stage I find that matters are raised which fall into one of the following three categories.

First, there are expectations that are not currently accommodated within the program but which are consistent with the stated objectives of the course and can be accommodated with advantage or at least without great cost. In this case these expectations are accommodated at the end of the planning session when the course is restructured in the light of all of the matters raised in the information gathering phase.

Second, there are expectations that cannot be accommodated without seriously compromising the advertised purposes of the program. In this instance I see two choices. If every participant has these conflicting expectations then one can either abandon the course or, if possible, renegotiate the purposes and restructure the program. In many instances the sponsor would have to be involved in that renegotiation. If, on the other hand, some participants have the same expectations as the course sponsors, then I suggest to those with conflicting expectations to either leave the course or go along with those of the sponsor.

Third, there are reasons for attending that are clearly at odds with the objectives and spirit of the course and which could seriously undermine the climate and hence reduce the quality of the learning for

all involved. Participants may have been sent against their will or the course provides them with added opportunities. I have had comments such as 'it could not be worse than work', 'it gives me a chance to do some family business', 'I hear the food is good', 'I make money on the per diem', 'I have never had the opportunity to visit before', 'to look for a job'. Whether or not you regard these comments as legitimate or tongue-in-cheek, they need to be addressed seriously as unacknowledged, they can certainly have an impact on the conduct and quality of the course.

My preferred approach is to deal with this situation immediately.

Matters involving potential conflict of time can usually be accommodated in the planning when the program is redrawn. This often results in an arrangement that allows most people to fulfil outside commitments and retain the number of course hours intact. Usually people will start earlier, or work later to accommodate their various interests. However, the times need to be negotiated by the whole group. The outcome is usually an increased commitment to the meeting of the course objectives. The program might have certain group projects which allow the group to plan their time to meet both personal and group objectives. My experience is that if you don't do this, people will absent themselves to meet personal objectives at times which are disruptive to the course's purposes.

Where one or more participants clearly have no commitment to the course objectives I negotiate towards two possible outcomes; either for the participants to leave the course or to have them participate fully in the course while suspending judgment about its worth for the first day. Then in the light of that experience they can make up their minds to continue to fully participate or leave the course.

In some courses I have conducted people have left the course in some cases to return to work, in others to pursue their own interests for the remainder of the time of the course. I am often asked whether I report any absence to the participant's employer. The answer is no. Participative approaches are reliant on a level of trust between all those involved. If you are not prepared to respect confidentiality when people are being honest, then don't ask for that honesty. If you feel some obligation to your sponsors, negotiate that quite explicitly before you start and inform the participants of the results. But don't set up a situation of confidentiality and then misuse it.

The Broader Societal Context and Its Future: The Futures Scan

Objectives: to

- assist participants to share some of their values and world views and hence allow them to act more purposefully as a community;

- . provide a collective view of what is going to be of importance in our society and the world in the next few years and some idea of the impact of that future on the matters we are considering in the workshop. This activity is aimed at allowing the others with whom we are jointly planning to see the range of views of the future and to open each view to revision;
- . reduce the potential for misunderstanding and stereotyping;
- . establish a climate that encourages participation and risk taking.

The first phase of data collection plays a major role here as its specific objectives are to:

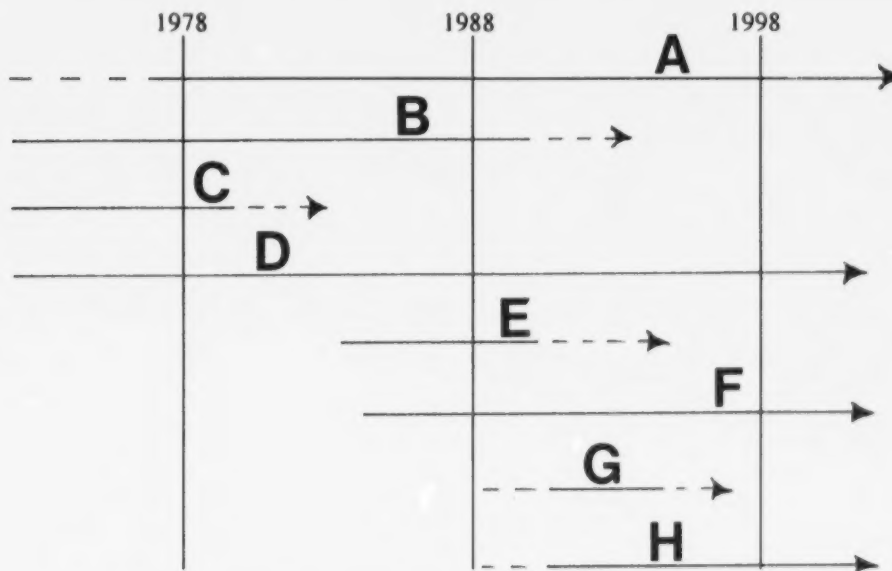
- . enable all participants to make a plenary contribution early in the workshop in a nonthreatening situation which recognizes their experience and judgment as unique and valuable; ie, to establish that everybody can contribute although their contributions will diverge;
- . expand individual horizons.

I am often asked about the futures scan approach to planning. I now, therefore, whenever possible build the following rationale of futures scans and open systems into the introduction.

All planning and education are carried out against assumptions about the future. If a group of people are planning collectively it aids communication if they are aware of what each other's assumptions are and to what extent they are common. They may after consideration become more common. While in most educational activities people are not directly concerned with common futures, they are part of a community or temporary organization for the duration of the course and are involved in mutual learning. Clear and accurate communication is essential to learning. Knowing 'where others are coming from' greatly assists that communication.

Whatever people's views, their actions need to be seen against them if they are to be understood. While there are other assumptions that also influence the way that people think (assumptions about people for instance) a joint look at the future is a safe, fast, comprehensive and yet incisive way of making attitudes and values explicit as well as providing a common context from which to work. It is an operationalization of the first principle of effective communication.

A systems approach to the future not only gives recognition to the views of all participants, it also allows them to be shared with others and to be reassessed. This then is why we brainstorm the three questions about the changing, the unchanging and the anticipated. But why word the questions in that way?



A, B, C & D are important ingredients of the 1978 environment

A, B, D, E & F are important contributing factors to the 1988 environment

A, D, F & H are important factors of the 1998 environment

Let us consider three points of time ten years apart, say 1978, 1988 (now) and 1998. We can plot the different types of events raised by these questions on this time chart and arrive at the attached diagram where:

A is something that became important prior to 1978 and will remain important through 1998; eg, the commercial application of the microchip.

B is something that became important prior to 1978, is important in 1988 but fades in importance before 1998; eg, the Australian Coal Industry.

C is something that became important prior to 1978 but fades in importance by 1988; eg, student politics.

D is something that became important prior to 1978 and will remain important through 1998; eg, human nature.

E is something that became important prior to 1988 but fades in importance by 1998; eg, arms reduction negotiations.

F is something that became important prior to 1988 and will remain important through 1998; eg, the resurgence of Islam.

G is something that will become important after 1988 but will fade in importance by 1998; eg, the signing of a treaty between the Aboriginal people of Australia and the Australian Government.

H Is something that will become important after 1988 and will remain important through 1998; eg, electronic mail.

You may disagree with the examples I have chosen, or in fact they may already have been disproved by the time you read this. Such differences of opinion will also arise in the 50-150 items that the participants proffer in response to the three questions. The next stage allows the participants to argue such questions as they narrow them down to the eight or ten factors that they believe will be of most importance in 1998 or whatever the year is that you choose.

The social context which determines what is or is not possible in a given period consists of the interaction between those that are of importance at the time. These ten factors then serve as a reference set against which the other work of the course or conference should be considered.

Methods

There is more than one participative process that can be used here. I have used nominal group and brainstorming. I find the former better for groups where the issue is more focussed and the participants are used to putting their point of view. Brainstorming is better where there are likely to be people who lack confidence.

Brainstorming

Ten to fifteen minutes brainstorming the following question:

'What changes have you seen in the last 10-15 years that you believe will be important into the future?

Technological, economic, social, religious, environmental, international, national, regional, local?'

When the flow starts to slow down, brainstorm the following question. In practice people will throw up data on both questions. Record it on the appropriate sheets.

'What unchanging things do you think will be important into the future?'

When this flow starts to slow down brainstorm the following question:

'What things are you aware of that are over the horizon but will be important into the future?'

It is my experience that the whole process takes about 30 minutes. There are 50-100 items in response to the first question, 10-20 for the second and 1-5 for the third.

This planning module can be used for all sorts of gatherings where planning and community building are amongst the objectives. Normally in the case of courses, the number of participants is less than 40. However, in other gatherings larger numbers are involved. The largest group I have had numbered 95 and it worked. However, with these large numbers some other additional mechanism is needed for participants to gain some idea of the composition and motivation of the gathering as a whole.

If possible assemble in a circle or horseshoe, desirably only one layer, to maximize eye contact.

The managers can also contribute late in the piece if there are areas they believe to be of importance that have not been listed.

Clearly spell out and adhere to the following ground rule. 'Only questions of clarification are allowed.'

If someone disagrees with a contribution, list their opposing view and move on and avoid argument at this stage. Discussion calls for justification and increases the risks involved in contributing. Near the end of the brainstorming ask those who have already made a contribution to desist until further notice and call for contributions from those who have so far not spoken. One needs to be able to stand a silence.

I have found that people managing this process for the first time are worried that there will be no or few contributions or that the contributions will be too long winded. My experience is that the former is not a problem and that the latter is rarely a problem. Where it is a problem, you need to make the point that there is a chance to discuss and debate differences in the small groups that follow where argument can be more constructive.

Nominal Group

Ask participants to write on a sheet of paper the three most important changes they have seen in the last 10-15 years. Give them three to five minutes to complete the task.

Then move around the group in order asking for and recording on butcher's their changes. Ask for their top priority first, but if it has been already recorded, go to their second or third. Keep moving around the group until everybody's three items are recorded.

My experience is that some people want to justify or explain their items and sometimes get in additional items. I have found that you need to be firm early otherwise the time drags out and resentment builds amongst those who adhered to the rules.

Ordering Priorities

Objectives: to

- . start people working constructively in small groups on value based issues;
- . force people to argue and clarify their position and values using data that is understood and generated by all;
- . give some agreed structure to the mass of data produced in the data collection step.

Process

Clearly spell out the task and point out that they can add to the list or combine items. However, they have to make judgments in that they can't choose more than eight items. The wording I often use is:

'Which eight of these (changing, unchanging or over the horizon), do you consider will be of most importance for the area under consideration over the next five to ten years?'

Groups of six to eight - no larger.

Don't appoint a chairperson or rapporteur. You can ask somebody to convene the meeting with the clear instructions that they not act as chair or rapporteur. Otherwise the group becomes dependent on the appointed person or their shadow.

Allow 3/4 hour and then check on the completion of the task. Give an extra 10-15 minutes if necessary.

Ask for a report back on butchers paper. The facilitator should use the first report to synthesize the following reports as they are presented and hence highlight the extent of agreement between groups.

The make up of the groups should be as diverse as possible.

If several groups working independently arrive at similar results the validity of the outcome is reinforced and the fear of manipulation of the outcome reduced.

Ground Rules

Objectives: to

- . establish norms for the community which would otherwise take more time and probably permit destructive conflict to develop;
- . avoid things that normally block people's participation and learning.

Process

In plenary ask the questions:

- . 'What are the things that are likely to get in the way of your contribution or learning?'
- . 'Are there any special requirements that you have, or disabilities that require special facilities?'

Start the process by giving some examples such as smoking, hard of hearing, outside commitments.

Resources Available

Human Resources

These comprise the participants and training staff with a catalogue of their experience, skills and knowledge.

Physical Resources

Familiarize participants with the extent and operation of the training and other facilities available.

Objectives: to

- . acknowledge experience, reduce dependence on the course organizers and encourage self sufficiency and self worth;
- . allow the course community to make use of its own resources wherever possible and hence enhance learning and reduce cynicism;
- . encourage participants to see that they can learn and make use of physical resources in unfamiliar settings.

Process

Use small groups and record on butchers paper.

It is often necessary to ask specific questions as people may not be prepared to push their skills or even recognize their value; eg,

'what relevant experience, skills, knowledge do you have that you are prepared to share on the course?'

It is my experience that this list needs to be kept open, as later on people recognize the relevance of their experience and/or recognize that they are not taking too great a risk to offer it to the group. There is more data around at the start of course than can be taken into the community's collective memory. And so it is important to be open to recognizing and using additional data later in the workshop. The early stages can be seen as the time to set the climate whereby this can happen.

This can be conveniently and logically dealt with at the same time as the exchange of experience about people's current role or it can be left to a later stage in the workshop when participants have a better idea of what aspects of their skill and experience might be of relevance.

List any other people around who may be of assistance and willing to contribute if suitable times can be arranged.

Training Facilities

Objectives: to

- . familiarize participants with the extent of the audiovisual, library and administrative facilities including word processors, photocopiers etc and the conditions and procedures for using them;
- . train participants, where necessary, to use the equipment open to them. Often participants can do this amongst themselves or if you train one group, they will teach others.

Process: for example

Hand out a catalogue of facilities and set down rules for use and access.

Provide projects that familiarize participants with the essential facilities such as library and PCs.

Provide an opportunity for supervised 'hands on' experience of word processing and audiovisual equipment.

Put up a sheet of butcher's paper to coordinate requests for films, tapes and other resources.

Find out who can already operate and are prepared to teach others.

Find out who wants to learn how to use the equipment in the long term as opposed to those who need to use it for this particular program and give priority to the former.

Participants' Current or Future Role in the Organization

Objectives: to

- . get people to focus critically on their current job, role or purpose, or the one they are moving to or aspire to, with a view to identifying the needs that might be met by the course;
- . give participants a detailed understanding of the way three other organizations are structured.

Process

Break into groups of three to five - definitely no more.

Clearly spell out the task.

- . 'what do you do in your job or in the job you aspire to?'
- . 'what is it possible to do in the job?' (you may have to spell out how the organization is structured to provide an adequate context)
- . 'what additional skills, knowledge, experience do you need to better do the job?'

Strongly suggest that they break up the time so that each has an equal time to describe their job (10-15 minutes each).

Ask groups to report on butchers paper about additional skills required.

Can be dealt with conveniently with 'resources available'.

Constraints

Objectives: to

- . ensure that planning is realistic and achievable given the time, resources and expectations of participants and organizers;
- . show that priorities need to be set and that all participants don't have to learn and experience the same things.

Process: The incourse briefing indicates that:

- . Not all of us have the same needs and priorities and choices have to be made;

- . There is not time to do everything;
- . Some tasks require the time of other people in and out of the course and this has to be programmed to a mutually convenient time;
- . There can be many activities going on at the one time;
- . Resources aren't infinite;
- . There may be some topics that cannot be adequately picked up in the time or context of the course.

Establishing Priorities and Filling Out the Program

Once these segments have been completed a long list of learning needs should have been generated. These need to be categorized and prioritized.

Objectives: to

- . take account of the needs as seen by the participants;
- . timetable these needs to meet both the priorities of the participants as determined on the course and those of the organizers as expressed in the preliminary program;
- . involve, wherever possible, the participants in the conduct of the course and the presentation of data and experience.

Process

Go through the various lists and categorize all of the identified needs into one of three categories:

- . those subjects that have been already timetabled and are adequately covered or where modifications can be made to cover the identified need;
- . those items which fall outside the bounds of the course, or which could not be dealt with adequately on the course because of shortage of time, lack of adequate resources or because they are incongruent with the objectives of the course;
- . those items which can be best served by devoting one or more of the undedicated sessions or learning exchanges.

List the learning exchange items along with resource needs and appropriate methodologies on a matrix with participants names. Add to the list any opportunities the course affords for participants to gain experience at organizing, managing or presenting parts of the program. Ask the participants to express their priorities up to the number of learning exchange spaces available. Indicate that as far as possible they will be programmed to avoid conducting participant's highest two or three preferences simultaneously.

Use the full matrix to program the learning exchanges. Check the program with the group as a whole to see if there are any anomalies or any scope for amalgamations.

Nominate a participant to design and coordinate each session, giving priority to those participants who have expressed a preference to gain organizational experience. They may need assistance to decide on the educational design of the session; ie, to determine whether the session should involve information giving, information sharing, problem solving or resolving conflict etc and organize accordingly. Assistance may also be necessary to find adequate resources.

Provide a short session on educational design.

Hand out the program of exchanges along with a list of those items that are to be dealt with in other parts of the course or are not going to be dealt with at all (giving reasons). Attach to it the matrix of responses so that people can identify and chase up, outside the program, others interested in areas that don't have sufficient backing to be programmed.

Each day emphasize the learning exchanges in the clearinghouse and point out that people don't have to stick to their initial choices. It pays to point out that a session of two or three can be as valuable for those individuals who participate as one containing all the course participants. Sometimes a number of 'I want to hear about' topics can be picked up in one session by allotting five to ten minutes to a number of contributors. Such matters are best negotiated at the clearinghouse.

Control and Management

Objectives: to

- . enhance learning of subject matter through acceptance of responsibility by the participants for the content and quality of the program;
- . put the responsibility for handling internal community issues onto the community;
- . spread the load and increase the number of options available;
- . allow participants to -
 - . gain experience in the conduct of courses and in leadership;
 - . to become conscious about group process, learning processes and organizational behaviour;
- . make the course manageable;
- . build up the self confidence of participants.

Process

The planning process outlined so far has provided participants with much of the information that is necessary if they are to effectively control and manage the course or workshop.

Provide an overall course structure that allows participants to exercise control and coordination. The key elements are the planning process, the morning clearinghouse, the learning exchanges and various committees the clearinghouse may wish to establish (educational, social, report) an introduction to college resources, the various incourse evaluations and the segment on educational design.

Establish the clearinghouse as the controlling body for the course.

Establish a program management committee to be responsible to the clearinghouse for the implementation of the program. This should include people representing the sponsors, the participants, the administrative support staff (if any) and course managers.

Provide a conceptual framework for the management of the course as a temporary organization.

Incourse Evaluation and Adjustment

The Daily Briefing Session and Clearing House

Objectives: to

- . provide a forum and a controlling body for those matters for which the course as a whole is responsible and must make decisions;
- . spell out the day's activities and allow for program adjustments;
- . allow for any general announcements;
- . provide a clearinghouse for any issues or misunderstandings;
- . provide time for participants to meet about their own agendas;
- . provide participants with opportunities to experience and practice leadership in small and large democratic groups.

Process

At least 3/4 hour should be set aside for the purpose. If there is nothing to discuss the next activity can come forward.

One of the managers should chair the first clearinghouse to model the process. At this stage in the course no participant will have the knowledge to do the job without heavy reliance on the management. Subsequently the clearinghouse should be chaired according to a roster prepared by the participants. The one ground rule is that it moves each day to a new person until all have had a chance to act as chair or until the course comes to an end.

For short courses the clearinghouse should be held each day. However for longer courses (three weeks or more) it is my experience that the clearinghouse decides to reduce it to every second day or even twice a week.

My experience is that the time needed varies greatly. Three quarters of an hour is strictly an average and should not be rigidly adhered to. It should go to task completion whether that be three minutes or three hours. Occasionally if there is an issue of some substance it can take two or more hours. If this happens there is usually great scope for learning about some basic issues as well as group process. In the latter case the management may wish to make some process observations to help the participants become conscious of these matters.

Incourse Review

Objectives: to

- . allow for adjustment or redirection of the course; eg, some of the matters so far dealt with may require more time, new issues may have arisen from the course proceedings to date, matters programmed for later may have already been covered incidentally or the need may have dissolved in the face of information or discussions already held;
- . assist in the planning of future courses;
- . give participants experience of formative evaluation and emphasise its role in organizational adaption.

Process

Discuss the process in the clearinghouse. The clearinghouse may wish to establish a committee independent of the management committee or have representation of the management committee. In my experience it has provided participants with a very valuable opportunity to learn about evaluation.

Program the evaluation as a part of the workshop activity.

The course managers should list the matters they want evaluated so that they may be included in the overall process. These should include questions about content, balance, control, management and process.

Suggest a process by which participants answer individually and then come together and make group reports on separate forms. Both individual and group reports should be recorded and the differences discussed.

Applications, Modifications and Limitations

Incourse planning as described in this chapter can be applied to a variety of courses, seminars, workshops and conferences. Table 1 will give the reader some idea of the range of different situations in which the author has applied the approach in its full or abridged form.

The time available for the program is obviously a limiting factor on what can be achieved, both in the way of participant planning and community self management. For programs spread over less than two days my experience suggests that self management of the course as a whole is of little value. It takes at least two days to establish the necessary information base, framework and roles. Much of the learning about self management arises from its practice over a period of days.

However, participation in the preparation and planning of the agenda is workable in an abridged form and I would claim necessary, in activities as short as two-three hours. The critical elements are the collection and sharing of participant's expectations and some agreement about the purposes. Even if it takes up to 50 per cent of the time any subsequent discussion is much more informed, misunderstandings are avoided and much is learnt in the exchange and sharing of information. For longer activities where it is important to develop a self managing learning community much more time must be spent in planning; I would say a minimum of six hours spread over four sessions for courses of five days or longer. In my view one should also always allow small groups to self manage, no matter what the time available for reasons outlined herein. Similarly, the control of an exercise can rest with the group as a whole for any course of more than two-three days' duration.

Residential and nonresidential courses differ in the possibilities and problems they present for participative planning. In residential courses more time needs to be devoted to the clearing house each day to deal with matters relating to interpersonal and community dynamics and housekeeping. On the positive side it provides a range of real matters to be self planned and managed by the community. Nonresidential courses require the course coordinator to take much more of the load

and a much more visible and active role, particularly if the intervals between the sessions or days are of a week or longer.

A diversity of experience, knowledge, age, culture, institutional bases, skills, educational backgrounds and sometimes language is a characteristic of the participants in many programs, particularly where adults are involved. Participative planning and self management is one way of recognizing and constructively dealing with this diversity. Those with knowledge in areas that others lack can act as a resource. Project groups can be constituted to take advantage of the diversity as the community can be grouped in various ways according to their level of skill or knowledge. The matrix of interests and individuals provides participants with the information to get together in twos and threes around questions of common concern outside the formal course time.

One of the more difficult tasks in programming the learning exchanges and interest groups is to determine how much time to devote to each topic. Some tasks may warrant a workshop of several hours or days. In other cases where experience is being exchanged four of five topics might be dealt with in an hour long session. Where this uncertainty arises a learning exchange can be devoted to exploring the depth of the area, establishing the resources available and planning subsequent sessions or workshops.

Some Pitfalls for Course Managers

Going through the motions of collecting the data and not taking account of it in a public way. This leads to cynicism and loss of commitment. Participants are content to have their expectations go unmet so long as they can see the reasons for it; eg, not shared by others, no resources available to meet them or outside the scope of the course.

Not providing direction and coordination where participants don't have the information, machinery, or the need to provide it themselves.

Staying in the content-expert role when it could be readily taken up by one of the participants.

Not recognizing or intervening when you realize a laissez-faire situation has developed because of your management or for other reasons.

Not explaining the process and educational design questions as they are encountered.

Delaying the production of a timetable incorporating the participant's planning and the information on which it is based.

Failing to have a clearinghouse at the appropriate intervals and times even if it only involves asking the question about the need. For courses of two weeks or less this should be held each day, preferably first thing each morning and all participants should attend. If it is set up correctly it is in the interests of the participants to be there and peer pressure and self interest provide the motivation, not management coercion.

Not modelling the underlying values of participation and self management. My experience is that this is the greatest barrier to the use of participative methodology. Participants can 'smell' hypocrisy and continually devise tests of consistency and authenticity. If you are not prepared to lose control of the course to the agreed controlling body, my advice is that you should not consider using participative processes in the first place as it will be seen to be manipulation and the course will become ineffective.

Not clearly establishing the extent to which different aspects of the course are negotiable.

Underestimating the capacity of the group to contribute to such tasks as priority setting, programming etc and to arrive at better solutions than those of the managers and organizers.

Not clearly articulating, clarifying and if necessary negotiating groups tasks.

Section 3. Conferences

Scope

To me the essential difference between a course and a conference is that in the former there is an expectation that those offering the course can assist participants to learn specified skills, knowledge, attitudes or behaviours. Those conducting the course contract to supply certain learning outcomes. It is in principle a one way transfer, an asymmetric relationship between the educator and the learner.

In the case of the conference, the organizers offer a forum where knowledge can be exchanged and/or developed; more of a market place. Those conducting the conference contract to set up a forum or environment within which this interchange or commerce in ideas can be most productive. The quality of the offerings depends on those who wish to use the forum for the presentation and clarification of their

ideas. It is in principle a two way process, involving the interchange and development of knowledge. It is potentially an interchange amongst equals, a symmetrical relationship between contributors and participants. This aspect of a conference is clear in the way *The Shorter Oxford English Dictionary* defines a conference as:

'a formal meeting for consultation or discussion'

Arising from this essential difference are other secondary differences that apply to such factors as numbers, length, the use and distribution of materials and early knowledge of the numbers attending.

In this chapter I am going to focus on the way in which participative processes can be used in the planning, management, conduct and control of a conference. As some of the applications are very similar to those discussed in some detail above I will cross reference them.

Within the above definition of a conference there can be a great diversity of appropriate designs depending on purpose, the organizational connectedness of the participants, distribution of knowledge, the nature of the subject matter of the conferring or whether the emphasis is content or process.

I stress that the extent to which it is of value to build participation into conferences depends greatly on these factors. In a planning or search conference the content is almost entirely generated by the participants out of their knowledge and experience as the need arises, and all participants are involved. However, the conference organizers determine the process by which the subject matter is generated and dealt with. In an academic disciplinary conference the subject matter is determined by an individual or group in advance of the conference usually in the form of a paper. The process then allows for the presentation and or discussion of these papers, largely on an individual basis. Here there is minimal scope for participation. However, it is my view that there are few situations that do not benefit from participation and it should always be at least considered in the planning phases. My experience is that if participation is built in as an after thought it usually comes unstuck.

The Planning Process

Conferences usually have a wider range of interests involved in the planning process than courses and workshops. While those involved are not strictly representatives of the ultimate participants they are generally drawn from the range of interests and organizations that might be expected to attend. This generally makes the planning process more difficult than that for courses and workshops. All have a view of what a conference is and how this particular one might be

designed and those views often differ greatly. As a result of this conferences are often an aggregation of unrelated parts with no overriding design principle. If, however, the planning committee can agree on some overriding design principle, then a diverse planning group is an asset.

While scope for participation in the pre event planning of a conference is greater than that for a course or a conference, the scope for in course planning is much less. The shortness of time, the large numbers and the diversity of expectations and purposes all dictate against it. However, there is some scope but it needs to be much more structured and normally needs to be done in sub-sections of the conference that have manageable numbers and some commonality of purpose. Allowing the plenary session of a large conference to significantly change its direction may appear to be democratic, but in fact is not as most participants are not there as free agents, they came in response to an advertised program and there is not the time nor the forum to seriously consider alternatives. Unless the advertised program allowed for such discussion and redirection, the fact of using the conference time to debate such change is discriminatory and potentially antidemocratic.

Mechanisms for feedback should be built into the conference and the conference managers should have a responsibility to consider this in the context of their overall responsibility to participants. With large conferences one of the difficulties of building in flexibility and in conference planning is the communication of the information to the conference as a whole. My experience is that one has to introduce multiple mechanisms of communication which are integral to the planning process itself.

Mechanisms for in conference planning, decision making and communication include the following.

Clearinghouse

A clearinghouse can be established at either the beginning or end of the day. Its purposes are multiple. These include announcements about program changes and new offerings, the debate of issues arising in sectors of the conference for which a conference wide discussion and decision is sought, and complaint.

My experience is that it is better to hold the clearinghouse at the end of the day so that organizers have a chance to respond to any feedback or can canvass issues through the next days newsletter. It should be chaired by one of the conference organizers or a representative of the sponsoring body.

Open Spaces in the program

These allow people to offer new workshops, discussion groups, or raise debates for example. It is important that there be administrative backup to allocate adequate room and equipment to new activities and to provide information about these new offerings in time for people to participate if they so desire.

Notice Board and Computer Systems for Programming

The notice boards need to be large and centrally placed as they become the hub of information exchange at a participative conference. Here people obtain the latest information about new offerings, sign up for various activities or make new offerings. As the information rapidly multiplies, it is important to have some system to locate information, ordered either by time or purpose or both. There are now available computer packages that do this. I have experienced a number of problems with such systems. The first is the reluctance of people to use them. This may change with time but I see it only as an adjunct to the notice board. The ability to scan the whole range of offerings, see how it is presented, who else is interested, discuss and clarify with others around is distinctive to the provision of the notice board.

Newsletter

A daily newsletter is essential in large participatory conferences. While announcements and notice boards complement the flow of information, there needs to be some permanent record of any changes that people can pick up at any time and take with them. It should be available in all the residences and at the conference venue prior to breakfast. The day's program should be on the front page. It can also be used as a place to publish letters and views and particularly any resolutions to be put to the day's clearing house. This often requires people to work into the night and early morning.

Breakfast Announcements

While it might sound like overkill, I have also found it helpful, where possible, to give announcements at breakfast. As we know that people are there for a variety of purposes which take them in and out of the formal proceedings of the conference, then it is our responsibility to provide communications that as far as possible recognize this fact.

Conference Office

A centrally located conference office is also an important part of the communications process. The conference office is ideally in two parts, a shopfront and a backroom. The back room should have a place for

planning and coordination meetings and for people to pursue urgent administrative tasks unhassled by participants.

Ideally the conference office should be fully equipped including telephones and fax connections with the outside world and a paging ability within the conference venue for conference managers and administrators. The radio telephone overcomes the problems of changing telephone numbers and the need to rely on Telecom connections.

Speakers' Corner

There are often ideas and opinions abroad in a conference that the organizers were not abreast of and so did not plan for. It is difficult to build these into the formal program late in the piece, but a speakers' corner can do the job. In a Speakers' Corner several participants may speak for say three to ten minutes on the subject of their choice. Providing a room, a program and a Chairperson so as to ensure all have a fair go, is all that is necessary.

Design

Given the above it is important to get early agreement amongst the conference planning team about the overall design features that are to be followed and applied to all decisions.

The following are the ones I have found useful to keep in mind when designing conferences. Not all apply to all conferences but they should be considered. To make changes at the last minute such as adding discussion groups can often be a waste of time or even destructive to the conference.

Diversity: allow for diversity in the following:

- . Participants' reasons for attending (information, network building, knowledge, skills, rest and recreation, making new contacts and renewing old ones, outside business, social support);
- . Preferred learning and meeting styles;
- . Contexts from which participants come and the expectations they bring with them;
- . The subject matter people believe to be important or to which they are willing to contribute;
- . Expectations of what a conference is;
- . Meeting formats as dictated by the purposes, spread of expertise, size of the groups and the amount of time available.

Non negotiable overall structure

The overall structure should be non negotiable. However, within that overall structure one can design a great deal of choice both between predetermined options and for people to do their own thing.

I am of the view that the overall structure, with the exception of the clearing house and the opening session, should allow for competing activities and formats. One of these options should be the ability to meet in informal groups over a drink. Thus, except where the overall conference purposes are being served, 'nobody has the right to an audience'. Also, the venue should include a coffee and drinks facility where informal work can be done.

Flexible substructure

Subconference conveners and workshop leaders should be given a free hand in the design and management of their own section but the timing should be a matter of negotiation. The conference committee should see that competing offerings as far as possible, are attracting distinct audiences and offer alternatives in format. It should also be in a position to assist contributors in the educational design of their activities if so requested. It is useful to have a capacity to video sessions where people have to make choices between sessions that are all of high priority to them.

Information

The more complex the conference, the greater the amount and variety of information needed by participants about the overall structure, design principles, choices and opportunities it offers. The majority of participants will not seriously inform themselves about the choices until they actually arrive, no matter how much information is sent out in advance. In part this is because people don't have the context within which to make good judgments. The degree of choice should increase during the conference.

Community Building

This is one of the most important aspects of a conference. I see two distinct things that need attention, the environment and the program.

The environment: It is highly desirable to have the following:

- . the residential accommodation within close walking distance of the venue;
- . areas where people can meet informally over a drink at any time of the day or night, desirably self help;
- . a venue where people who come early can meet and relax. Notify them of a specific time at which the

conference organizers will be on hand and where participants can informally meet and relax. Name tags, refreshments and a short welcome should be provided.

The program

Some sort of conference community activity such as a happy hour should be held at the start of the conference. There should be some structured activities aimed at getting people to mix across cliques and which allow them to sense the diversity of purposes and experience amongst attendees.

Where there are workshops designed to pursue conference wide purposes, participants should be allocated at random to facilitate the mixing of the conference.

Dinners and dances can also help but people tend to associate with those they already know.

Administration - additional comments

The personal computer and integrated database, spreadsheet and word processing packages can greatly assist in the administration of conferences. Enrolments inevitably come in on the day and the computer allows one to give clear and up to date information at a time of maximum pressure and rapid and arbitrary change.

Preconference information should be sent out about the program, location and facilities of residences and venue, travel, and places where early arrivals can meet. The amount of information people are given at registration is often large. It is most helpful if this is colour coded.

Evaluation

One can evaluate the content of a conference and/or the conference structures and processes. In my view the latter is the most important as it is the matter which the conference organizers can improve the next time around. However, as each conference is a very different animal it is important to try and tease out the basic design features. The problem is that the participants tend to think in terms of the content rather than the process even when they are satisfied or dissatisfied with the latter. Also we tend to lose our memory of the details of process and management more quickly than the subject matter. As a result where I have evaluated a conference I have done so at the end of the conference and have focussed on the design.

The most satisfactory method has been to put up sheets of butcher's paper with questions that can be answered with a tick or a yes or no and where comments can be added if so wished. I also add additional sheets for questions the participants may wish to add. This public

evaluation allows for some development of ideas that the individual questionnaire misses.

Status of any Decisions, Recommendations or Reports

The status of any decisions made by a conference or workshop is often a vexed question. Even if it is explicitly mentioned in the conference publicity that it has no decision making status and will not be structured to facilitate the making of decisions, there will often be pressures on the conference organizers to change this. On other occasions it may suit the conference organizers to find out the strength of support for particular recommendations.

I have found that voting on reports can be very helpful in clarifying issues and in indicating where the weight of opinion lies. Often people are surprised at the results. They often presume that the more articulate and outspoken have broad support, or that silence means consent. Voting shows that this is often not the case. One needs to clarify the status of the decisions very carefully if one is to acquiesce to the pressure.

At the least one can say that any vote taken has the authority of the individual citizens who chose to participate in it, particularly if the numbers are alluded to in any subsequent report of the decision. It cannot have the authority of the conference organizers or of the owners of the venue unless authorized by those bodies. Some people become conflicted because they are representing organizations and are unsure of their authority to vote as individuals. Certainly they cannot vote for their organizations unless they have the authority to do so.

It is never easy to manage these situations and in fact your authority to manage is likely to be the first thing to be debated. The procedures I have found to work on most occasions are as follows:

- . Where it is your intention to ask participants to vote on recommendations, indicate this in the preconference papers.
- . Never include working party reports in a conference proceedings without indicating their status. If such reports are seen as coming from the whole conference then time must be given for the full conference to discuss, amend and vote on their adoption.
- . Clearly establish the procedures you are going to follow and ask the conference to appoint a chair.
- . Pay close attention to time and clearly establish the division of time before you start.

- . When recommendations are requested, brief the task groups, impressing on them the need to be specific.
- . Vote on these recommendations in the normal way.
- . With discursive reports, it becomes very messy and time consuming to amend wording. It is better to vote on the inclusion or exclusion of the report from the proceedings and whether it should be a report of the group that authored it or of the conference as a whole.

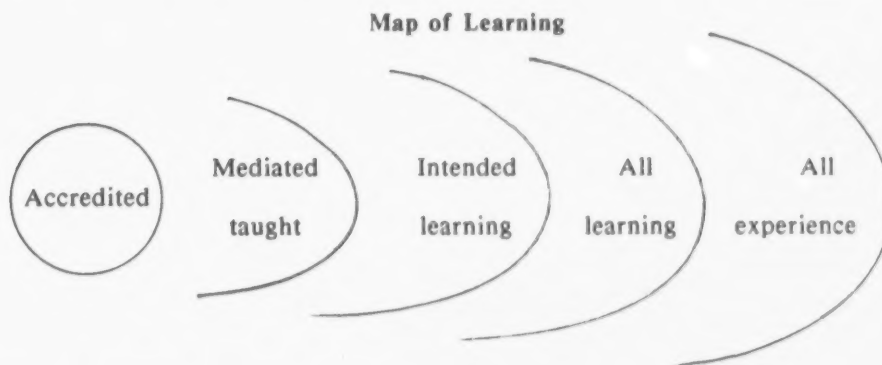
Section 4. Concepts and Constructs

In using participative approaches to course and conference planning, design and management, there is a need for participants to be able to call on constructs and concepts that assist them to reflect and learn from that experience in such a way that they can apply it to their own practice.

The concepts I have found useful in this respect relate to learning, education, systems, planning, organizations and politics. Some of those relating to organizations such as the self managing group and work satisfaction are dealt with in earlier parts.

Learning, Education and Teaching

Within and between countries we have different meanings for the word education. There is, however, usually some agreement about the broader concept of learning. The following 'learning map' helps people identify the different types of learning that are appropriate to different categories of education and gives recognition and value to the learning that occurs outside of educational institutions and courses.



The outer ellipse includes all of our experience, only part of which we have learnt from; that is, guides our thought and behaviour.

The second circle includes all of the learning that we do, planned and unplanned, whether it occurs at work, at home or in the classroom.

The next concentric circle encloses all of that learning that is intended. Some people define this learning as being education, but others confine the word education to those learning activities conducted by educational institutions such as schools, colleges and universities.

The penultimate circle includes our learning which is mediated by a teacher or educator and is usually, though not always, the province of educational institutions.

Finally there is a part of mediated learning which can be and is objectified and credentialed by the State or other institutions.

Types of Learning

The most fundamental distinction is between **Environmental Learning** on the one hand and **Abstract and Skills Learning** on the other. This distinction is covered more thoroughly earlier in this book under Educational Paradigms. Here I am only including the following explanation which I give participants who are involved in the control, planning, management and conduct of the learning activity in question.

I find it important to recognize the distinction Gibson has made between those things we have evolved to be able to learn directly from our physical and social environment and those that are social constructs and so mediated through individuals, artefacts, teachers, schools and books.

Our perceptual systems have evolved such that we can extract survival information directly from the social and physical environment and thus we learn directly, without the aid of a teacher or teaching resource as intermediary. For example, when we learn to speak our 'mother tongue', we do so directly from the social environment: if in that environment Chinese is the language that is spoken we learn to speak Chinese; if English is the language, we learn English. Similarly we learn a whole range of social and organizational skills in this way. Survival in a hostile environment had led homo sapiens to evolve this innate capacity. To enhance learning, we need to appropriately enrich the environment, to afford more opportunities for learning. A more appropriate expression is **the management of learning**. Up until recently this area of learning has been taken for granted and undervalued. It has been the province of mothers, preschool teachers and adult educators. However, it has been found that it is of increasing importance if the productive capacities of organizations are to be increased and the capacity of individuals to participate in the planning and management of their own affairs is to increase. As such, the need for it is gaining in recognition. Examples are the participative design

workshop, the search conference, various types of consultancies, the redesign of work and the provision of zoos and art galleries.

Abstract and skills learning on the other hand require abstract thought or practical routines, the results of which are stored and accumulated as bodies of knowledge or automatic actions. Individuals are not predisposed to do this learning directly from their environment but rather need to develop a number of constructs or routines; eg, disciplines and skills. This type of learning is intentional and the concept of teaching is central to it. Literacy is also central to abstract learning as it is the skill that allows us to access the stores of knowledge independently of others. Unlike learning to talk, learning to read and write cannot be directly acquired from the environment. It has to be taught and so is the basic subject of schooling. Reading and writing are relatively new skills and are not innate. They are based on abstract symbols which are social constructs. The learning of skills requires a model, advice on the best ways of proceeding, much practice and feedback. Not only can it be taught but its acquisition is easily measured. However, the idea of apprenticeship, learning from a 'master tradesman' is probably more appropriate.

Types of Learning and Appropriate Methods

Before people begin designing their own learning exchanges and workshops they need to know which methods and design features are most effective in producing learning of various materials and processes.

Methods

	Lecture	Seminar	Apprenticeship	Projects	Reading	Group Discus'n	Participative Design	Other Limited Self Mgt	Search Confs
<u>Required:</u>									
Skills			*	*			*	*	
Information	*	*	*	*	*	*	*	*	*
Perceptual Reconstruction			*		*	*	*	*	*
Attitudes & Values			*			*	*	*	*
Organizational							*		
Design & Redesign									
Planning & Policy Making									*

The preceding table summarizes our experience with the major categories.

While each method will always produce some learning in any area, the asterisks indicate the strengths and weaknesses of the teaching/learning methods and practical alternatives.

Skills covers a wide range from simple and routine to complex but there is an implicit 'know how' component. Reading or teaching abstractions is obviously not going to be particularly effective.

Acquiring information is an everyday function and never stops in fact. If the required information is of the abstract, disciplinary type, reading and some teaching, explanation or discussion are needed. This can happen as well in an apprentice or research trainee situation as in a formal seminar or lecture.

Perceptual reconstruction covers new understandings, changing attitudes and values and resulting shifts in directions and strategies. Participative methods shine here as Lewin demonstrated during the Second World War. However, the process of reconstruction can begin in an apprenticeship or hands on role. Perceptual reconstruction which is also emotional and cognitive reconstruction is essentially a process of putting the building blocks or pieces of the individual jigsaw of meaning together in a different way. It is only possible in situations when people are simultaneously able to use their experience and evaluate it in the light of others' experience when these others are trusted peers. Receiving information from an expert who is neither trusted nor an equal will have little power to achieve this most powerful form of human learning.

To learn skills a number of ingredients are required; a good model to emulate or copy, a great deal of practice, feedback to the learner about the quality of their performance, and both a safe and supportive environment in which to practice. Skills can be taught and objectively tested; eg, learning to do different sorts of mathematical manipulations such as multiplication or division, learning to weld or use a typewriter.

Information acquisition is enhanced under the following conditions; the learner regards the material as worth knowing, sees it of immediate use and finds it believable, understands the context and is motivated to learn.

People differ in their preferred means of acquiring knowledge such as reading or listening.

It should be noted that none of the above argues that knowledge needs to be acquired from a teacher or in an educational institution.

However, to acquire qualifications or accreditation one is required to know specified bodies of knowledge and teachers are trained to know the content of these bodies. They are also trained to efficiently impart this knowledge. Thus in some cases, the most efficient way of acquiring this specified knowledge is through the process of teaching. But it is far from being the only way.

Attitudes and values are developed over time and through significant and often traumatic events and relationships. While open to change from time to time, for the main, they are constant and guide our perceptions, actions, behaviours and world views.

Values imply an attribution of worth or importance by the individual. Attitudes imply a fixed or predisposed way of viewing a particular situation or event. Attitudes and values serve to give inflated value to that experience and evidence that supports our current view of the world and to devalue contrary evidence. However, if there comes a point where our need for rational explanation cannot tolerate the contradictions, we undergo a perceptual reconstruction in which we search for a set of values and constructs that better fits our experience and knowledge. This restructuring of attitudes is rare but when it occurs it is completed within a relatively short period of time.

Attitudinal learning is not open to teaching but is open to managed processes such as participative planning conferences (search conferences). The methods of attitudinal change involve three steps.

First unfreezing or decomposing the existing structure. There are many variations of participative work such as role plays, psychodrama and group discussion that can lead to an unfreezing of existing attitudinal structures, and particularly stereotypes of individuals and roles and judgments about cause and effect.

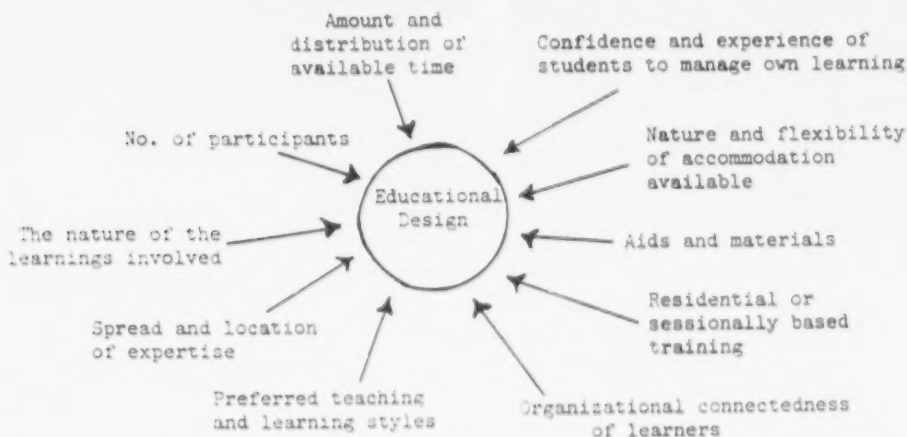
Second there is a search for a rationale that makes better sense of one's experience. This is often at hand from those organizing the particular event or from other participants.

Third there is a period of refreezing or incorporation of the new structures into one's world view and habitual set of responses, and adjusting to one's social environment; eg, developing new attitudes towards other ethnic, economic or religious groups; developing new hygiene, dietary or sexual habits.

Choice of Teaching/Learning Methods

When we are choosing methods, the most important consideration is the type of learning being sought. However, there are many other factors as well and the participant who is designing aspects of the course is made aware of this in the following ways.

The next diagram shows the factors that I believe should be taken into account when designing an educational activity for adults.



Number of participants

If information is sought and the knowledge all rests with one expert, then lecture or broadcast methods are appropriate and the numbers are limited only by the accommodation or the reception area of the broadcast. If however, one is concerned with planning, problem solving or attitudinal change which demand participative methods, then the number of participants may need to be limited to 30 or even 10.

The nature and flexibility of the accommodation available

If one is expecting the use of both broadcast and small group methods, the venue and its furniture must be flexible. Accommodation in which the seats are tiered and bolted to the floor is not conducive to learning and problem solving.

Aids and materials

For concept development, the ability to clearly show models and special and causal relationships diagrammatically is important. In the case of discussion, planning or problem solving groups, the availability of flip charts to keep a semi permanent and easily transportable record of the discussions and findings is important.

The spread and location of expertise

Where the expertise lies with one person, lecture or broadcast methods are appropriate. Where part or all of the relevant experience and expertise lies with the participants, brainstorming, nominal group and

discussion group methods are appropriate. Where the expertise is external to the group it needs to be available via printed material, expert or audio/video presentation.

Residential or sessionally based training

When one is concerned with policy development, planning or problem solving, extended periods without distraction are important and hence residentially based accommodation is desirable. When the content is abstract or skill based such as mathematics or calligraphy, short presentation or demonstration sessions interspersed with long periods for practice and consolidation become important.

The preferred teaching style of the teacher and learning method of the learner

Given that more than one method may be appropriate for the teaching, learning or management of a given subject, for example lecture/discussion and project work, the teacher/manager should choose the method that they are best suited to. Likewise some students/participants may learn more by reading and self study than by listening to a teacher and vice versa. The student/learner should, where possible, choose the method that is most effective for them. Methods that allow the learner maximum control, flexibility and self direction should always be an option.

The confidence of the participants and the extent to which they can manage their own learning

If a group of learners are able to take responsibility for their own learning, and have the confidence to teach each other, they will learn faster and more effectively. However, where the learners have not yet developed these skills and confidences teacher centred methods will be more effective. These competences can be developed within days if they are required.

The amount and distribution of available time

Modes such as problem solving, self directed learning and group discussion require sessions of a minimal length of half a day. Concept development sessions should be one hour at the most.

The question of organizational interdependence

If participants are organisationally independent most methods are open to be used. If, however, the participants are addressing a planning or organizational task, then it is important to choose methods that ensure that all can contribute according to their role and experience, develop a shared understanding of the environment and the history and

desirable future of the organization. Thus brainstorming, nominal group and discussion methods become essential.

If participants are not or do not aim to be organizationally connected then methods which set the activities in a planning or problem solving environment are less effective.

Organizational Concepts

If the intention is to enable participants to learn from the process of the workshop as well as the content, it is important to have some concepts which they can use as a framework for reflecting on that experience.

The course, conference or workshop is in fact an organization which is an instrument enabling us to achieve our collective objectives and at the same time a laboratory in which to get hands on experience of the control, management and conduct of an organization.

However as organizations, workshops differ from the normal in their duration, and in particular the relative emphasis on planning and evaluation compared with the conduct of their affairs. It is therefore useful to identify and focus on the characteristics of a **Temporary Organization**.

Temporary Learning Organizations

It is useful to think of workshops and to some extent conferences as temporary learning organizations and to clearly distinguish between their functions of planning, control, management and implementation or conduct. The planning and control lies between sponsors and the workshop community with the management being delegated to a group by the controlling body and the conduct of particular sessions or events being allocated to individuals depending on the nature of the event, the location of necessary expertise and the need and desire to develop or practice skills.

Each of the above elements differs with respect to the nature and location of the information needed, the time scale over which it is exercised, the ease with which it can be handed over to participants and the scope for, and value of, any associated learning.

The issues relating to planning are exhaustively canvassed above and in the chapter on searching.

Control

The controlling or directing body of an organization is the one that determines its continued existence, its purposes, its overall policies and

appoints its management. Aspects of control can be delegated to sub groups of the controlling body.

Up until the course commences the control is with the sponsoring institution or entity. Once the conference is underway aspects of the control can shift to a body which is based on the course participants as a whole. What those delegations are and how the interests of the controlling institution are carried into the control of the course need to be clearly defined. Usually the course manager is representing the controlling body and has a veto power on matters of central concern to it.

It is my experience that this control is best vested in a daily clearing house composed of participants and conveners and chaired after the first meeting or two by one of the participants. It has been argued that the participants do not have the knowledge to take responsibility. It is my experience that through this process they rapidly pick up that knowledge and that in practice the clearing house becomes a very important activity in responding to changing needs and in retaining the commitment and understanding of the need for these changes. While the conveners have a veto power, if, as members of the clearing house they cannot convince a group of the importance of the particular activity, they are unlikely, via the veto, to get the participants' commitment to changes decided unilaterally by the convener. Such commitment is necessary if one is to maximize the learning.

Any non negotiable aspects of the program should be clearly identified prior to the commencement of the workshop. These may be changed by the workshop clearing house only by unanimous decision. A participant has a right to expect what has been advertised even though its relevance may seem to most to have disappeared as the course develops.

The time necessary will vary from day to day depending on the issues and it is likely to take upwards of an hour if the management group is reporting or a major issue has erupted. In cultures where participative decision making is traditional they usually take longer, but the decisions are better understood and enacted.

Management of:

The term management has many different meanings. I use it in the sense of implementing the policies of the controlling group of an organization. All aspects of management do not have the same potential for learning and so I have found it of value to recognize the following areas of management; the educational and social programs; evaluation, administration and reporting. While each of these functions could be carried out by the one manager or management team but if one is looking to provide participants with opportunities to

practice and learn from the processes of management, segmentation provides increased opportunities.

Management teams can be formed for each of the above.

The educational management team should consist of a member of the organizing group plus three to four elected from amongst the participants. Membership can rotate but should be on a timescale that allows those involved to come to grips with the task and allows for continuity of management.

The other management teams can be sub groups of either the educational management team or the clearinghouse. The differences between these organizational locations should be discussed in the debriefing.

The Educational Program

This is concerned firstly with the educational design and planning that occurs before the course starts and secondly once convened, with ensuring that the agreed program is carried out between clearing house meetings.

I have found that the only people with a clear and connected view of what is going on in a training activity, particularly in relation to its objectives, are those with the responsibility for the educational management. This becomes apparent as soon as one attempts to hand over this responsibility. At this point, one finds the need to pull from one's head all sorts of information and assumptions which have not been made available to the participants. There is also the need to reiterate things that one has earlier made known but which were not perceived by the participants, presumably because they did not appear to be relevant at that stage. I have found that it takes at least two days and much discussion to hand this responsibility over to participants.

The Administration

This is concerned with bookings, registrations, finances, travel, liaison with the venue management and the preparation of information and materials. The transfer of responsibility for administration to the participants is more time consuming and in my experience is rarely warranted in terms of the learning opportunities created. In the case of ongoing educational institutions such as Neighbourhood Centres the administration will represent an important source of learning.

The following functions differ from the above in that they need come into existence only after the workshop starts and so that the question of transfer of responsibility does not arise.

Evaluation & Reporting

In most instances I have found some participants who wish to gain experience in these activities. In each case the sponsors and managers are also likely to have an interest and so will participate on the committee and contribute both to its planning and content.

The Social Program

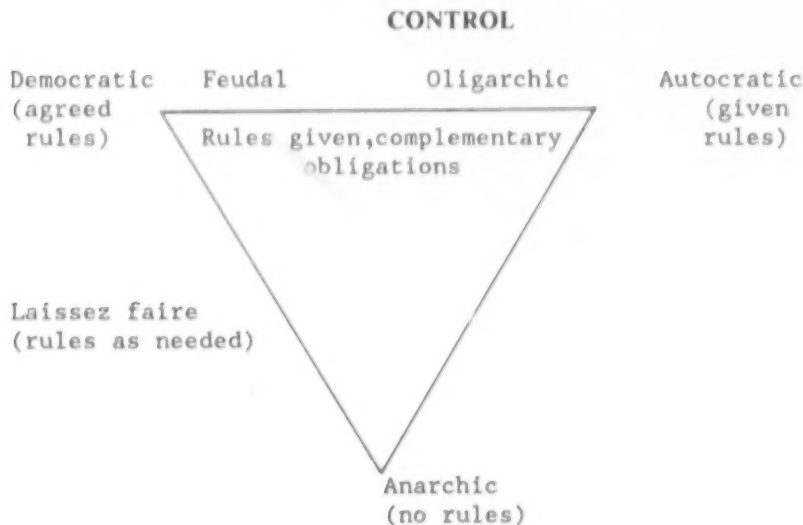
Only of great importance in residential activities in which case it becomes critical to the development and maintaining of a good self managing social climate. Often this group has a dispute handling as well as a planning and organizing role.

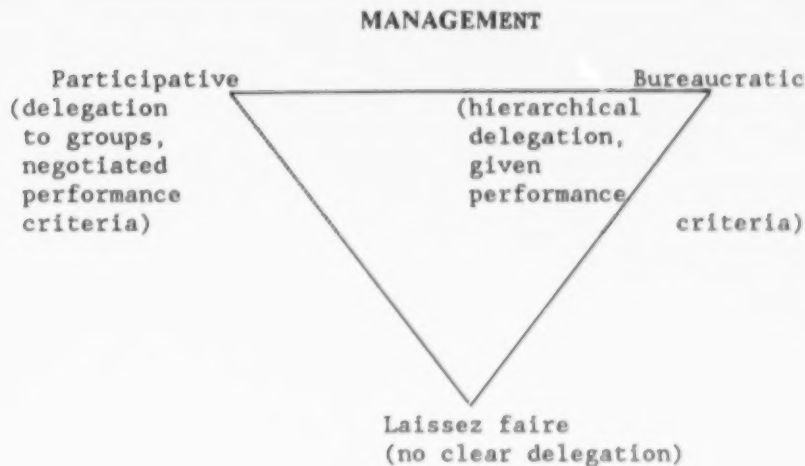
Equipment

This is of importance only if there is either a shortage of equipment or some participants wish to learn how to use it.

Political Concepts

Because the focus is on participative design and management, political concepts such as democracy, participation, autocracy, bureaucracy, usually become part of the currency of discussion. I have found that these terms are used loosely across the division between the control and management of an organization. This in my experience, leads to a confused discussion unless we can come to some agreement about usage at least for the purposes of the discussion.





Editor's Note: The usage of these terms is at odds with that employed elsewhere in this volume.

Firstly, the political usage of the terms concerning the formulation of rules or laws which govern the relationship between people as a part of the 'State' and the obligations involved. I put forward the following as the suggested usage of these terms.

The terms **autocratic**, **oligarchic**, **dictatorial**, **feudal**, **democratic**, **laissez-faire**, and **anarchic** refer to the distribution of power within a State and particularly the power to make rules (laws) and enforce them. The notion of obligations arising from the way power is distributed or given up is also implied in these concepts.

The terms **bureaucratic** and **participative** on the other hand refer to the nature of the apparatus established (by those who rule) to administer or manage the State's affairs. These concepts are concerned with how power is delegated and exercised and how and where decisions are made and who carries out decisions.

The administration of the political will can be either bureaucratic or participative regardless of whether the political form is autocratic, oligarchic, dictatorial, laissez-faire, democratic or feudal.

The term **laissez-faire** is used in both situations.

A **bureaucratic** form of organization has the following characteristics:

- . hierarchy of authority. Authority is exercised one level above that at which the work is carried out;
- . division of the total function into single person tasks;
- . fixed, codified rules usually authorised by the political power.

- A participative form of organization has the following characteristics:
- . hierarchy of group objectives established by the political power, the operational details of which are negotiated from level to level;
 - . organization divided into groups of people who are given a group task (group objectives) which is capable of being selfmanaged by the group. The group has all the information, tools, skills, materials, rights of access to other groups necessary to plan, coordinate and control its activities. The resources and expected outcomes are negotiated with those responsible for the next level or objective;
 - . fixed and codified rules regarding the interrelationships between the groups. Rules and decisions as to how the group task is achieved are determined by the work group.

Application to Courses and Conferences as Temporary Organizations.

Here the temporary organization is set up autocratically and the control is maintained in that state until the course is convened. There is then, to varying degrees, a shift towards democratic control. However, if the organizing body retains a veto it is only a guided democracy or perhaps subject to feudal control. During the shift in control there is often a dip towards anarchy. Likewise different aspects of the management function shift between bureaucratic, autocratic and laissez-faire during the time of the course or conference.

Section 5. Tools and Handouts.

Course Planning Handout

The following note is handed out at the start of or prior to the course.

"Course Planning

As course participants you will be involved in the planning, control and coordination of parts of the program. There are several reasons why we have adopted this practice. Firstly, because each new set of students brings with them a unique set of needs, experience, skills, knowledge, attitudes, that cannot be adequately or efficiently determined beforehand. This process allows the program to be adjusted to incorporate these factors. Secondly, by being included in the planning you can better see the rationale, meaning and placement of each of the parts of the program and will be better equipped to participate in its management. Thirdly, our experience is that participation leads to enhanced opportunities to learn from one

another, from contributors and from one's own involvement (learning by doing).

Of the program that you have been given, 25% is completely left open for you to plan (learning exchanges); 50% has been determined in broad outline but is open to some shift in emphasis. 25% is fixed as a result of commitments that had to be planned well in advance; eg, guest speakers, which are an essential part of the overall management of the course (clearinghouse, planning session, midcourse review) or other which the sponsor has insisted upon."

There are three aspects to the planning process.

First, the collection and exchange of information about participants and trainers expectations of the course and reasons for participating, the broader shifts that are going on in society, the resources available (including yours), our role in the organization; and the constraints operating on the course.

Second, conducting the planning process in such a way that participants and staff are assisted in working together productively.

Third, giving priority to and programming the needs and resources that are identified in the planning session.

We find each course has its own emphasis, unique resources and different needs. The process is represented diagrammatically on the next page.

Educational Design Handout

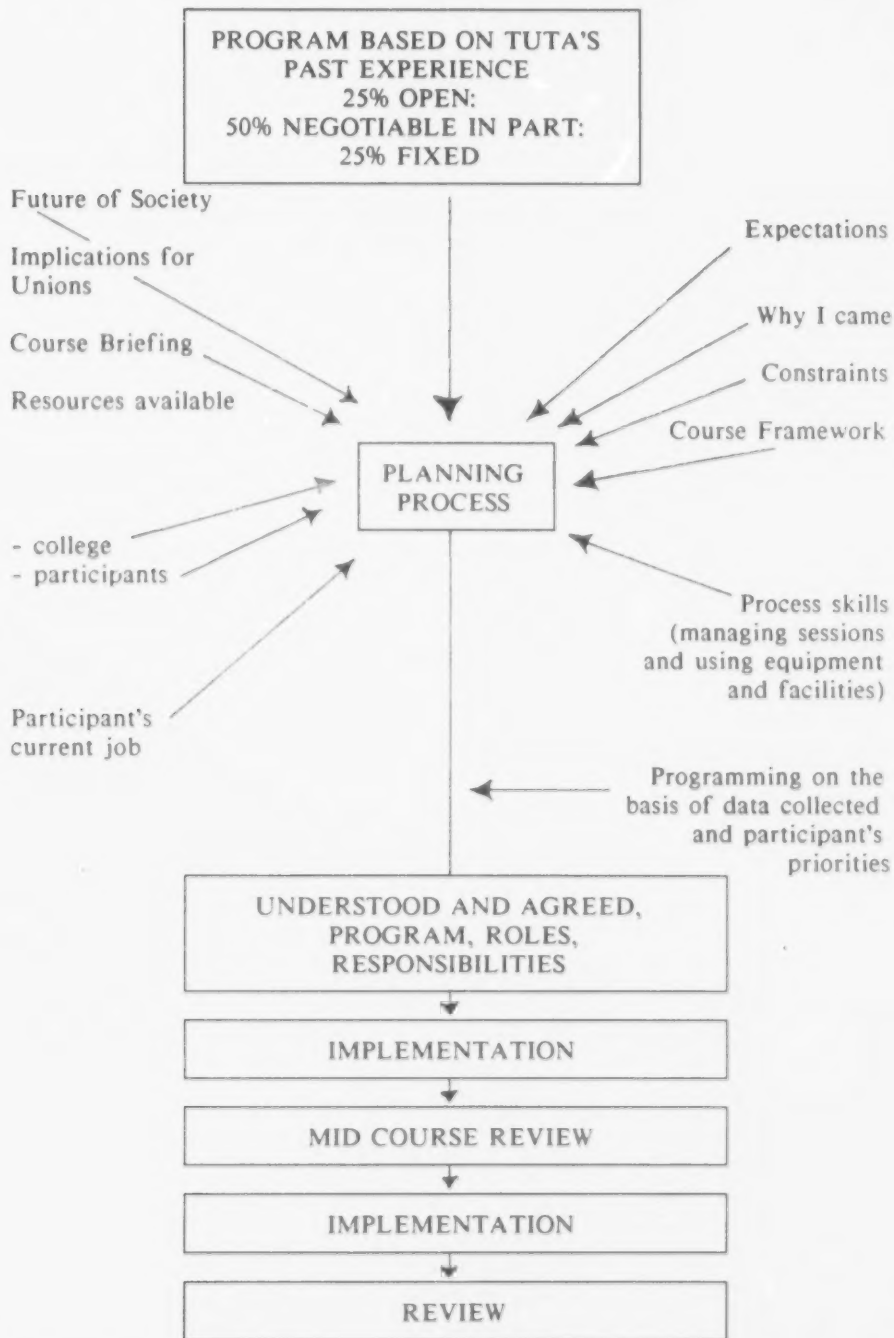
The purpose of these notes is to provide participants with conceptual tools to assist them to become selfconscious about the process.

I apply the term 'educational design' to the process of matching the social or group structure with the educational task and available resources.

One of the most difficult things in the management of a workshop is to determine how to structure a session or project for maximum learning. Several factors need to be taken into consideration including:

- the nature of the task; ie, is it information giving or information exchange? Problem identification or problem solving? Decision making, agenda setting, concept development, knowledge acquisition, skill development or attitudinal change?

INPUTS TO THE PLANNING PROCESS

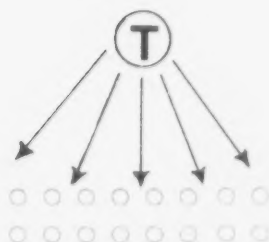


- who needs to know or be involved?
- how many people are involved?
- what are the resources (knowledge, skills, experience) that the group need to achieve its goals?
- what is the appropriate basis for division into small groups?

I find it of value to distinguish the following social structures:

Broadcast - One To Many

Application



When: Giving information, briefing, clearinghouse, enumerating ideas and conceptual frameworks.

When: The necessary information and skills resides in one person.

When: Everybody in the community needs and has a responsibility to know, so they can participate in the planning and management of the community.

This structure is the most time efficient for the above tasks. These sessions can be video recorded which allows for multiple usage and replay.

The **physical setting** is not critical and can be in rows or circular. It may help to have tables if participants need to take notes.

There is no limit on numbers as it is a broadcast. Direct feedback is desirable but not always possible and not essential.

Community Discussion

Application



When: Taking community wide decisions. The groundwork may previously have been done in smaller groups or in the large group. If the basic discussion (decision making) has been in smaller groups there needs to be an opportunity for each group to report to the whole community.

If each group is discussing the same subject then it is most manageable to hear all groups before allowing general discussion (clarification questions only after the individual reports). If each group is discussing a different subject, then have the discussion on each groups

report immediately after it has been given. Before starting, clarify the time available and divide equitably and adhere to it unless the whole community decides otherwise.

It is also appropriate when discussing issues of community wide concern at the clearinghouse. Some issues have to be dealt with at the community level if they are to be resolved, dissolved or agreed, to the community's satisfaction. Otherwise they will continue to fester and be in the way of the work of the community.

It is also applicable for problem solving, clarifying and developing concepts. This is a more creative mode but harder to achieve with large numbers. Its achievement will depend on the nature of the subject, the clarity of the task and the trust within the group. Trust in this instance depends on individuals allowing others to contribute in their stead. It is contributing by silence so that a connected discussion can be sustained.

In terms of **physical setting**, each member of the community needs eye contact with all others for this to work effectively.

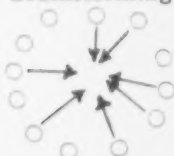
The physical setting places a desirable upper limit of 40 or 50 people. It is possible for larger numbers to be accommodated. However, the larger the numbers, the more fragile the fabric of understanding, trust and submission to collective will. The more these factors diminish, the more easily the meetings can be sabotaged by one single minded individual or sub group who don't see their interests being met by the process.

One can resort to other devices if the group is unable to act purposefully as a whole; eg, the use of meeting procedure, representative systems, voting systems, breaking into smaller groups and feeding back to the larger group. The latter are necessary if win-lose and lose-lose questions are being decided. However, the quality of the decision or solution is likely to be inferior and there may not be total community commitment to the outcome.

Data Collection and Information Sharing

There are several methods available. I will mention two - brainstorming and nominal group.

Brainstorming



Pooling ideas to get the maximum number of possibilities- a creative activity. Don't allow discussion of ideas, only clarification. Discussion of ideas creates circumstances where the person has to justify their contribution and this immediately stops the less articulate and

less confident from contributing, stifles the flow of ideas and so only the confident, forceful, articulate and the incensed contribute.

Data collection is also a practice which heightens participation and gives value to participation.

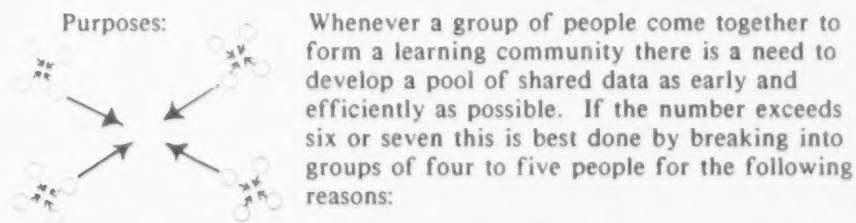
The best **physical setting** is one where all participants are in eye contact but it is not essential. The product needs to be recorded so that all can see their contribution, preferably on butchers paper (flipcharts) so that the record can remain on view. However, a black or white board will suffice if the record can be immediately recorded and circulated to participants. The recorder should not act as a censor or gatekeeper.

If the range of ideas is the primary objective, there is no real limit on numbers except your capacity to record the contributions. Three or four people can be recording the ideas at the one time. If participation is important, the upper limit is 30 or 40 unless the conference breaks into subgroups for the task.

Nominal Group

The physical setting is as for brainstorming. The upper limit for numbers is 20-25 as each person usually takes two to three minutes over the course of the activity to present their three points.

Sharing Information, Expectations, Experience and Purposes



More than one person can be talking at once and for longer given a fixed time for the exercise. Take as an example 30 participants in a 90 minute session. If each described their experience in plenary session each participant would have three minutes. If the full session broke into six groups of five, the group reporting would take 5 minutes x 6 groups = 30 minutes, leaving 60 minutes for each group and hence 12 minutes per individual. That is four times the amount of information exchanged and sorted.

There is a limit to the number of successive contributions (seven to ten for me) one can hold in one's mind and later recall.

It takes time to sift our expectations, relevant experience and purposes, particularly as they often require an elaboration of context or environment if they are to be meaningful.

If four or five others have some detailed knowledge of your experience and/or situation, then there is four to five times the chance it will be called on subsequently at the appropriate time. Additionally, you don't have to advocate or push your own contribution, the other four to five will do it if they believe it appropriate. As well as amplifying the chance of relevant experience being subsequently built into the discussions, it also has the effect of suppressing or attenuating ideas that participants raise but which are not relevant or important to the work of the course or conference. This cuts out a lot of the noise and blind alleys that distract from the central purpose.

Each group can sift, summarize and prioritize its experience without going into the detailed story of every individual. If the summary is cumulative and on butchers paper, it rarely takes more than five minutes.

In a group of five, strangers are more likely to feel at ease and talk about their experiences, and take risks, than they are in a group of 20 or 30.

Each person thus gets to know four to five others in some depth as well as an overall impression of the full membership.

If the rapporteur pushes their views inappropriately this soon becomes apparent and the group usually punishes the behaviour.

For the **physical setting**, you need either sufficiently flexible furniture to allow groups to form, or space outside the room for them to meet. Lobbies, corridors or bedrooms will all serve the purpose, particularly if butchers paper is used for recording.

Up to 50 participants in ten groups of five can exchange information while staying within an individual's concentration span and capacity to absorb information. Beyond those numbers, one needs to split the group into sub conferences and the compiled information from these circulated or posted. It is unrealistic to expect each participant to be able to develop and maintain shared world views with more than 30-40 others in the space of a week. Sometimes there are major parts of the world view that are given and unquestioned such as in a religious or political meeting and in these cases, numbers may go higher.

Small Group Discussion

Small groups should be used whenever:

- . the large group (community discussion) is unable to deal with the job at hand in a connected and constructive way;
- . it is more time efficient (a number of different tasks can be tackled at the one time);
- . the larger group is searching for direction;
- . there is a need to set priorities or sift a large quantity of material (eg, following data collection);
- . there are a large number of divergent opinions to be accommodated or worked through. Sometimes there is pressure to stay in the larger group. Possible reasons are needing the broader group to put all necessary views up, wanting to be in on all the gossip, inadequate trust or the overall or small group tasks are not understood or agreed;
- . the relevant information is spread amongst the group.

Whenever small groups are used, there will be a need to report back to the full community.

Division of Labour

Some division of labour is necessary to deal with the workshop task efficiently and effectively.

At some stage sufficient trust will develop in the conference or workshop for the task to be divided between different groups. This is the stage at which individual members are prepared to trust others to do parts of the task on their behalf. If trust is low, there is a danger that group emotional assumptions, particularly dependence, will prevent a group from breaking into smaller groups. To avoid this the group needs to become a democratic work group and as such have an agreed purpose, a clear task, sufficient time and the resources, including experience, to do the task.

The first prerequisite is that the total community agrees on the way the task is to be divided. The second is that the manager clearly spells out the subtasks and the third is that the products return to the total community for modification, discussion, adoption or rejection.

Catering for Diverse Interests

In most conferences, workshops or course, there will be some information and issues that will be of interest or high priority to only some participants. Participant's priorities can be determined by making a matrix listing the topics on one dimension and the participant's names on the other and then asking participants to order

their preferences up to the number of sessions to be devoted to these subjects.

The workshops can then be programmed so that the majority can participate in their top priorities. In some instances several parallel sessions may be run, in others only the one, depending on the priorities. The procedure places the onus of priority onto the participants and guards against the provision being pushed in the direction of the interests of the articulate. It also allows the participants time in which to decide and negotiate their interests. I usually stress that attendance at such sessions is voluntary.

Timing

When a small group is given a task that involves decision making, problem solving or conceptualization, it helps to allocate them sufficient time to the work free of constraints such as fixed meal times or overnight break; ie, they need autonomous working time. This allows people to have second thoughts, check things with group members in private or with others outside the group or sleep on the matters. If such a break is not allowed, people can doubt the validity of their work. They feel it could have been channelled or limited in some way.

Other Points

When a discussion is focussed on details that are of concern to only two or three in the group, the interested parties should be asked to get together after the session.

Matters of concern to the whole group and about which there is agreement in principle should be dealt with by a subcommittee.

The drafting of detailed statements should be left to a small group which submits its product to large group scrutiny and approval.

When a meeting breaks spontaneously into a number of conversations, relevant to the task at hand, it may be a sign of loss of direction, a task too difficult for the whole group to handle, too much available information or the emergence of a new direction. Once identified, it is best managed by obtaining agreement in the large group about the nature of the impasse and then breaking into a number of small groups of three to four people for 10-20 minutes to devise ways to break the impasse. Then the plenary reconvenes and the groups report on a cumulative basis-only reporting on things not mentioned by previous reports until an agreed course of action emerges. When it does emerge it will be seen immediately and spontaneously and the community can continue on its task in plenary.

Butchers' Paper Handout

Why Use Butchers' Paper?

It is a public record of meeting which cannot be manipulated without the acceptance of the whole group. It, therefore, meets the criteria of openness.

Allows for clear, economical reports that can easily be amalgamated and kept.

Cheap, now available in cut sheets at most stationers.

Readily accessible to all present.

Can use anywhere so long as you have a felt tip pen and masking tape, or are within cooee of a newsagent.

Acts as a memory aid once you have passed onto other questions. One glance can remind you of the content or drift without unduly distracting you from the content of the discussion at the time. The record can be added to at any time.

It turns the room into a home papered with shared artifacts.

Learning Exchange Form

Instructions for filling out learning exchange form

Place numbers 1 to 7 in order of preference against the learning exchanges listed on the back of this page -

1 means first preference

7 means seventh preference.

Place a cross against sessions you are prepared to lead or areas where you have experience/skills/knowledge to contribute.

Tick columns A and B if you want practice at running a session or chairing a guest speaker.

Please return by 5.00 pm Monday.

NB The format of learning exchanges will vary according to its purpose and the nature of the learning involved. So the structure will differ for the following differing purposes.

Input or information giving;

Information sharing;

Problem solving;

- . Skill development;
- . Concept clarification;
- . Concept development;
- . Attitudinal change.

For more detailed explanation see the notes on **Choice of teaching/learning methods.**

An Example of a Learning Exchange Timetable

Choice Matrix for Learning Exchanges

(15) Union Education						2		
(14) Women in the Workforce	7X						7	
(13) Being an effective delegate			3X			7		
(12) Types of leadership		8	7		2		6	
(11) Negotiation - (Techniques (Process (Psychology			4		3	5	6	5
(10) Handling redundancy	4			1				
(9) Meeting procedure						7		1
(8) Industrial Democracy			3		4			
(7) Gaining competence in written communication		1		2		4		
(6) Psychology of small and large groups	5					3	3	
(5) Gaining confidence		6		6	2	2		
(4) Public speaking		4	2					2
(3) Communicating within Unions and between Unions and between Unions and management and community		5			1	1	1	6
(2) Membership apathy	6	7	1					1 7
(1) Developing leadership in others				7				4 3
	Bill S.	Tania V	Joe B					

Choice Matrix for Learning Exchanges

A	Practice in running a session	/		/				
B	Experience in chairing guest speakers		/			/	/	
(26)	Off-shore manufacturing - implications for third world							
(25)	Public image of unions		3	5				3
(24)	Wage relativities	3			6			
(23)	Debureaucratization of unions	2						
(22)	Dispute Handling			5	4			2
(21)	Worker & Management	1				7	6	5
(20)	Health and Safety			6				
(19)	Consciousness raising groups - women, minority, etc							
(18)	Producing a Newsletter		2					
(17)	Civil liberties							
(16)	Amalgamation of Unions - Industry unions						4	
		Joe B		Bill S		Tania V		

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Timetable of Learning Exchanges and Special Sessions

LEARNING EXCHANGES

DAY	TIME	TOPIC	ROOM	COORDINATOR
THURS	11 am	(3) Communicating	T14	
		(22) Dispute Handling	T15	
FRI	11 am	(13) Being an effective delegate	T14	
		(14) (Women in the workforce)	T15	
		(19) (Consciousness raising)		
		(20) Health and Safety		
MON	9 am	(2) Membership Apathy	T14	
		(21) Worker/Management Psychology	T15	
WED	11 am	(11) Negotiation Techniques Process Psychology	T14	
		(18) Producing a Newsletter	T15	

SPECIAL SESSIONS

DAY	TIME	TOPIC	ROOM	COORDINATOR
TUES	2 pm	(6) Gaining Competence in Written Communication	T14	
WED	2 pm	(9) Meeting Procedure	T14	
THURS	11 am	(3) Communicating	T14	
		(22) Dispute Handling	T15	
THURS	2 pm	(5) Gaining Confidence	T14	
FRI	2 pm	(4) Public Speaking (listen to tape before Friday)	T14	
MON	2 pm	(1) Developing Leadership in others	T14	
		(12) Types of Leadership	T15	
WED	2 pm	(6) Psychology of small and large groups	T15	
WED	7.15 pm	(15) Union Education	T15	

NOTES

Learning exchange topics will be spelt out in the clearing house on the day they are conducted.

People are not held to the selection they make originally.

Topics (10) (17) (23) (26) have not been programmed because of lack of support. There is material in the library on each of these if those who selected these topics wish to follow them up. The group could also meet at a time of its own choosing.

Union Amalgamation will be picked up in the input sessions on Union Policy and decision making.

Those subjects raised in the planning sessions but not listed in the learning exchanges will be covered in the programmed segments of the course; eg, Economics, industrial relations, and the project.

Public image of unions has been included in communications.

The person co-ordinating is responsible for co-ordinating and leading the session - not the content of the session. The content may either come out of discussion or be provided by somebody the coordinator lines up beforehand. The people whose initials are listed are prepared to provide information or direct the coordinate where to get it. The list of participants' relevant experience may also provide information about who could contribute to a particular session.

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